IBM WebSphere Business Modeler: Process Mapping and Analysis

(Course code VB184)
(Classroom Course code WB184)

Student Notebook

ERC 1.0

WebSphere Education

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Trademarks 11

Course description 13

Agenda 15

Unit 1. IBM WebSphere Business Modeler: Process Mapping and Analysis . . . 1-1
- Course objectives 1-2
- Course materials 1-3
- Modeler course roadmap 1-4
- Course evaluation 1-5

Unit 2. Introduction to business process management and WebSphere Business Modeler 2-1
- Objectives 2-2
- What is on executives' minds? 2-3
- What does business process management really mean? 2-4
- BPM — the growing trend 2-5
- Additional business process management terminology 2-6
- IT tools and technologies 2-7
- What is service-oriented architecture? 2-8
- Component-based development 2-10
- IT becomes more flexible through the use of SOA? 2-11
- IBM products support BPM and SOA 2-12
- IBM's SOA life cycle stages 2-15
- Starting point for business process analysis 2-17
- Different levels of capability based on needs 2-18
- Starting with the process 2-19
- Foundation for complex analysis 2-20
- Boeing 747 Jumbo Jet: Developed from models 2-21
- When do you need to model something? 2-22
- Why model something before building it? 2-23
- Start with the business process 2-24
- Understand and manage core business processes 2-25
- Why model business processes? 2-26
- Taking the process model to the next step 2-27
- A multidimensional business model 2-28
- Capabilities of WebSphere Business Modeler 2-29
- Integrating the business and IT 2-30
- Integrating with IBM Rational RequisitePro 2-31
- Linking requirements with Modeler elements 2-32
- Modeler starts the development process 2-33
- Modeler and its interfaces to related products 2-34
- Summary 2-35

Unit 3. WebSphere Business Modeler overview 3-1
- Objectives 3-2
- Introducing WebSphere Business Modeler 3-3

WebSphere Business Modeler value 3-4
Modeler supports a heuristic approach 3-6
Modeler documentation features 3-7
Modeler analysis features 3-8
Modeler simulation features 3-9
Modeler usability features 3-10
Modeler user features 3-11
Import formats 3-12
Export formats 3-15
User interface: Eclipse 3-18
The four-pane view is the default Modeler desktop 3-19
Basic menu bar navigation 3-20
Basic tool bar navigation 3-21
Project Tree view 3-22
Process editor navigation 3-23
Model diagram creation navigation 3-24
Basic elements used in a process model 3-25
Basic Modeler terminology 3-26
Walkthroughs 3-27
VMware 3-28
Walkthrough — starting the VMware 3-29
Walkthrough — starting the Modeler 3-30
Walkthrough — Quickstart wizard (1 of 2) 3-31
Walkthrough — Quickstart wizard (2 of 2) 3-32
Walkthrough — Welcome page 3-33
Walkthrough — Project Tree 3-34
Walkthrough — process editor 3-35
Walkthrough — add tasks (1 of 2) 3-36
Walkthrough — add tasks (2 of 2) 3-37
Walkthrough — connectors 3-38
Walkthrough — adding business items 3-39
Walkthrough — connecting elements 3-40
Summary 3-41
Exercise 3-42
Review questions 3-43

Unit 4. Creating a business process diagram 4-1
Objectives 4-2
Using the process editor in WebSphere Business Modeler 4-3
Six modeling modes 4-4
Business modeling modes 4-5
Business modeling modes for validation 4-6
Creating a process model 4-8
Primary elements used in modeling 4-9
Task 4-10
Process 4-11
Service 4-12
Relationship between activities 4-13

Converting elements 4-14
Repository 4-15
Decisions and fork 4-16
Merge and join 4-17
Start, stop, and end 4-18
Use of stop and end 4-19
Connector 4-20
Copying and pasting elements 4-21
Summary 4-22
Exercise 4-23
Review questions 4-24

Unit 5. Define elements and attributes 5-1
Objectives 5-2
Adding details to the process model 5-3
Adding relevant information to the diagram 5-4
What is a business item? 5-5
Business item information 5-6
Adding business items 5-7
Business services and business service objects (1 of 2) 5-8
Business services and business service objects (2 of 2) 5-9
Resource information 5-10
Adding a role 5-11
Adding resources 5-12
Individual resource 5-13
Bulk resources 5-14
Adding a timetable 5-15
Organization information 5-16
Adding an organization unit 5-17
Adding a location 5-18
Adding structure 5-19
What is a classifier? 5-20
Adding classifier information 5-21
Organizing detailed model information 5-22
Additional elements 5-23
Timer 5-24
Map 5-25
Notification broadcasters and receivers 5-27
Notification broadcaster 5-28
Notification receiver 5-29
Observer 5-30
Task — detailed attributes (1 of 6) 5-31
Task — detailed attributes (2 of 6) 5-32
Task — detailed attributes (3 of 6) 5-33
Task — detailed attributes (4 of 6) 5-34
Task — detailed attributes (5 of 6) 5-35
Task — detailed attributes (6 of 6) 5-36
Understanding connection graphics 5-37

Making the diagram more meaningful 5-38
Summary 5-39
Exercise 5-40
Review questions 5-41

Unit 6. Completing the process model 6-1
Objectives 6-2
Completing the process model 6-3
Free-form and swimlane 6-4
Modeling techniques 6-5
Swimlane — additional capabilities 6-6
Swimlane layout determined by analytical needs 6-7
Local process and subprocess 6-8
Loop (1 of 2) 6-9
Loop (2 of 2) 6-10
Decisions — detailed attributes (1 of 4) 6-11
Decisions — detailed attributes (2 of 4) 6-12
Decisions — detailed attributes (3 of 4) 6-13
Decisions — detailed attributes (4 of 4) 6-14
Additional process documentation 6-15
Organizing the diagram (1 of 3) 6-16
Organizing the diagram (2 of 3) 6-17
Organizing the diagram (3 of 3) 6-18
Summary 6-19
Exercise 6-20
Review questions 6-21

Unit 7. Model validation and static analysis 7-1
Objectives 7-2
Validation fundamentals 7-3
Static analysis overview 7-4
Static analysis functions 7-5
Process model analysis (1 of 2) 7-6
Process model analysis (2 of 2) 7-7
Resource analysis (1 of 3) 7-8
Resource analysis (2 of 3) 7-9
Resource analysis (3 of 3) 7-10
Organization model analysis 7-11
General analysis 7-12
Type instance matching matrix analysis 7-13
Matrix analysis 7-14
Summary 7-15
Exercise 7-16
Review questions 7-17

Unit 8. Basic reports and queries 8-1
Objectives 8-2
Querying, reporting, and printing 8-3

Modeler report terminology 8-4
Predefined reports 8-5
Documentation reports 8-6
Creating a report from the diagram 8-7
Detailed process summary 8-8
Creating a report from the Project Tree 8-9
Process reports — process 8-10
Process annotation report 8-11
Process procedure report 8-12
Process level details report 8-13
Process reports — repository and service 8-14
Service and repository specification reports 8-15
Process reports — task 8-16
Task specification, statistics, by role 8-17
Data reports 8-18
Business item specification and utilization reports 8-19
Resource reports 8-20
Role and resource specification 8-21
Organization reports 8-22
Organization unit and location specification 8-23
Generating reports 8-24
Printing reports 8-25
Exporting reports 8-26
Exporting a report 8-27
Printing a diagram 8-28
Export a diagram 8-29
Queries 8-30
Documentation queries 8-31
Summary 8-32
Exercise 8-33
Review questions 8-34

Unit 9. Project management, methodology, and approaches 9-1
Objectives 9-2
WebSphere and business process methodology 9-3
Entry point for the common modeling approaches 9-4
Core phases of the common modeling approaches (1 of 2) 9-5
Core phases of the common modeling approaches (2 of 2) 9-6
Reasons for modeling processes 9-7
Understanding the business problem 9-8
Context and purpose of the process model 9-9
Define the project boundaries 9-10
Clearly define and document the scope 9-11
Define a process architecture 9-12
The process architecture 9-13
Type of process modeling project 9-14
Process modeling projects, scope, and outcome 9-15
Comparison of common process modeling project types 9-16

Contribution of the process to the goals 9-17
Identifying stakeholders 9-18
Stakeholders involvement 9-19
Defining standards and agreeing to best practices 9-20
Process modeling standards (1 of 4) 9-21
Process modeling standards (2 of 4) 9-22
Process modeling standards (3 of 4) 9-23
Process modeling standards (4 of 4) 9-24
Implementing standards 9-25
Modeling project consideration 9-26
Typical roles in a modeling team 9-27
Team dynamics 9-28
How will the data be collected? 9-30
Summary 9-31
Exercise 9-32

Unit 10. Collaboration support for version control 10-1
Objectives 10-2
Using version control tools with Modeler 10-3
Environments for modeling 10-4
Need for project versioning 10-6
Controlling all the elements in a model 10-7
Concurrent Versions System (CVS) 10-8
IBM Rational ClearCase 10-9
IBM Rational ClearCase 10-10
Reasons for using versioning tools 10-11
Modeler version control terminology 10-12
Typical sharing sequence 10-13
Adding a ClearCase repository 10-14
Adding a CVS repository 10-15
Project sharing 10-16
Commit to repository 10-17
Repository view 10-18
Checking out a project 10-19
Version control 10-20
Synchronize project data 10-21
Update versus synchronize 10-22
Resolving conflicts 10-23
Locking and unlocking elements: ClearCase 10-24
Viewing the history of a component 10-25
Comparing versions 10-26
Comparison view 10-27
Audit trail 10-28
Get content 10-29
Disconnect projects 10-30
Development using project versioning 10-31
Best practices for version control (1 of 2) 10-33
Best practices for version control (2 of 2) 10-34

Deletion strategies 10-35
Mark element for removal (1 of 8) 10-36
Mark element for removal (2 of 8) 10-37
Mark element for removal (3 of 8) 10-38
Mark element for removal (4 of 8) 10-39
Mark element for removal (5 of 8) 10-40
Mark element for removal (6 of 8) 10-41
Mark element for removal (7 of 8) 10-42
Mark element for removal (8 of 8) 10-43
Broadcasting change 10-44
Import and export 10-45
Summary 10-46
Exercise 10-47
Review questions 10-48

Unit 11. Collaboration using Publishing Server 11-1
Objectives 11-2
Collaboration using Publishing Server 11-3
WebSphere Business Modeler Publishing Server overview 11-4
Benefits of Publishing Server 11-6
Technical overview 11-7
Publishing server portals 11-8
Welcome portal 11-9
Draft and Released portals 11-10
From draft to released project 11-11
Draft portal 11-12
Released portal 11-14
Modeling, integrating, and publishing 11-16
Publishing a project 11-17
Client services: Client publisher 11-18
Add a publishing server 11-19
Publish a project with references 11-20
Override elements confirmation 11-21
Main page: Project Tree 11-22
Main page: Navigate to different panes 11-23
Outline view 11-24
Comment view 11-25
Opening comments 11-26
Adding comments 11-27
Attachment view 11-28
Attributes view 11-29
Attributes view: Model attachment 11-30
Summary 11-31
Exercise 11-32
Review questions 11-33

Unit 12. Import and export 12-1
Objectives 12-2

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Importing and exporting 12-3
Importing from Microsoft Visio 12-4
Visio import restrictions 12-5
Mapping Microsoft Visio shapes 12-6
Mapping to business items (1 of 4) 12-7
Mapping to business items (2 of 4) 12-8
Mapping to business items (3 of 4) 12-9
Mapping to business items (4 of 4) 12-10
XML file format 12-11
XML file format examples (1 of 2) 12-12
XML file format examples (2 of 2) 12-13
XML Schema Definition import reference 12-14
Mapping XML schema constructs 12-15
Delimited text import reference 12-16
Delimited text attributes that are not supported 12-17
Business services and business service objects 12-18
Export formats 12-20
Workspace migration from V5.1 12-22
Project import from V5.1 12-23
Project checkout of V5.1 project 12-24
Results of successful migration 12-25
Migration from V4.2.4 12-26
Migration from V4.2.4: Import an organization 12-27
Summary 12-28
Exercise 12-29
Review questions 12-30

Unit 13. Help and troubleshooting 13-1
Objectives 13-2
Modeler Help 13-3
Welcome page (1 of 3) 13-4
Welcome page (2 of 3) 13-5
Welcome page (3 of 3) 13-6
Tips and tricks 13-7
Modeler Help — search scope and Web links 13-8
Modeler Help — tutorials 13-9
Modeler Help — Web links 13-10
Download updates 13-11
Hover help 13-12
Redbooks 13-13
Summary 13-14
Exercise 13-15
Review questions 13-16

Unit 14. Summary of process mapping and analysis 14-1
Objectives 14-2
Products covered in this course 14-3
The relationship between the process and technology .14-4

When do you need to model something? 14-5
Why model business processes? 14-6
Multidimensional business model 14-7
Modeler supports a heuristic approach 14-8
The four-pane view is the default modeler desktop 14-9
Six modeling modes 14-10
Primary elements used in modeling 14-11
Adding relevant information 14-12
Additional elements 14-13
Validation fundamentals 14-14
Static analysis overview 14-15
Query overview 14-16
Generating reports 14-17
Defining standards and agreeing to best practices 14-18
Comparison of common process modeling project types 14-19
Environments for modeling 14-20
Need for project versioning 14-22
Publishing Server 14-23
Modeler Help 14-24

Appendix A. Modeler glossary A-1

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Course description

IBM WebSphere Business Modeler: Process Mapping and Analysis

Duration: 3 days over a 2-week period

Purpose

This course is a self-paced, distance learning version of course WB184. Students complete three days of material at their own pace during a two-week period, using online tools to view and listen to the pre-recorded lectures. The course also includes hands-on lab exercises, e-mail support from product experts, and four optional live interactive sessions hosted by an instructor to discuss questions about the course material.

The course teaches students how to use Business Process Management (BPM) practices while using the powerful features and capabilities of WebSphere Business Modeler. To meet the demands of a constantly changing environment, organizations need a clear understanding of how their processes work. WebSphere Business Modeler supports process improvement by capturing a comprehensive view of the way companies do business.

This course focuses on concepts and procedures involved in modifying and customizing business process models based on modeling modes. Students explore Business Process Management scoping and methodology along with project standards, participate in interactive discussion on solution modeling, and build their own models based on a business scenario. The course also introduces the use of project versioning, modeling solutions, and Web publishing.

Hands-on lab exercises give students the opportunity to gather requirements, set goals, and create, analyze, report, and update business process models. Students perform lab exercises in modeling using the Swimlane editor, importing from other tools like Microsoft Visio, and reviewing models on Publishing Server. To complete the hands-on lab exercises, students download Modeler software and course material to their computers.

For training in simulation, analysis, and advanced features of WebSphere Business Modeler, students should take the two-day course IBM WebSphere Business Modeler: Process Simulation and Analysis, course number WB186 (classroom) or VB186 (self-paced).

Audience

This course is designed for business analysts, implementation consultants, project managers, support engineers, and sales and marketing professionals.

Prerequisites

None

Agenda

(0:45) Module 1. IBM WebSphere Business Modeler: Process Mapping, Simulation and Analysis
(0:00) Exercise 1. There is no exercise for this unit

(0:30) Module 2. Introduction to business process management and WebSphere Business Modeler
(0:15) Exercise 2. WebSphere Business Modeler installation

(0:30) Module 3. WebSphere Business Modeler overview
(1:00) Exercise 3. WebSphere Business Modeler overview

(0:30) Module 4. Creating a business process diagram
(1:00) Exercise 4. Adding definitions and structures

(1:00) Module 5. Define elements and attributes
(1:00) Exercise 5. Define elements and attributes

(0:30) Module 6. Completing the process model
(1:00) Exercise 6. Completing the process model

(0:20) Module 7. Model validation and static analysis
(0:45) Exercise 7. Model validation and static analysis

(0:30) Module 8. Basic reports and queries
(0:45) Exercise 8. Basic reports and queries

(0:30) Module 9. Project management, methodology, and approaches
(3:00) Exercise 9. Modeling for process mapping

(0:30) Module 10. Collaboration support for version control
(1:00) Exercise 10. Collaboration support for version control

(0:30) Module 11. Collaboration using Publishing Server
(0:45) Exercise 11. WebSphere Business Modeler Publishing Server

(0:30) Module 12. Import and export
(1:00) Exercise 12. Importing from Visio

(0:15) Module 13. Help and troubleshooting
(0:30) Exercise 13. Using Modeler Help

(0:15) Module 14. Summary of process mapping and analysis
(0:00) Exercise 14. There is no exercise for this unit

Unit 1. IBM WebSphere Business Modeler: Process Mapping and Analysis

What this unit is about

This unit describes the course agenda and objective.

Course objectives

- Modeling for mapping and analysis
  - Introduction to business process management
  - WebSphere Business Modeler overview
  - Creating a business process diagram using process editor
  - Creating definition and structures for modeling elements
  - Completing a process model
  - Model validation and static analysis
  - Project management and methodology
  - Collaboration support for version control
  - Collaboration using Web publishing
  - Import and export
  - Troubleshooting and help
  - Review of modeling for mapping and analysis

Figure 1-1. Course objectives VB1841.0

Notes:

Course materials

- Software:
  - Modeler software file includes WebSphere Business Modeler
  - Other software files include CVS install, SVG Viewer
  - Class files for lab exercises

- Documentation:
  - Student Notebook
  - Student Exercises

- References:
  - WebSphere Business Modeler Information Center
    - Click **Help** → **Modeler Help** from the menu bar
  - Modeler library, documentation, Redbooks on the Web
    - `http://www.ibm.com/software/integration/wbimodeler/library/`
  - IBM WebSphere Training for Modeler
    - `http://www.ibm.com/developerworks/websphere/education/enablement/curriculum`

Figure 1-2. Course materials VB1841.0

Notes:

Modeler course roadmap

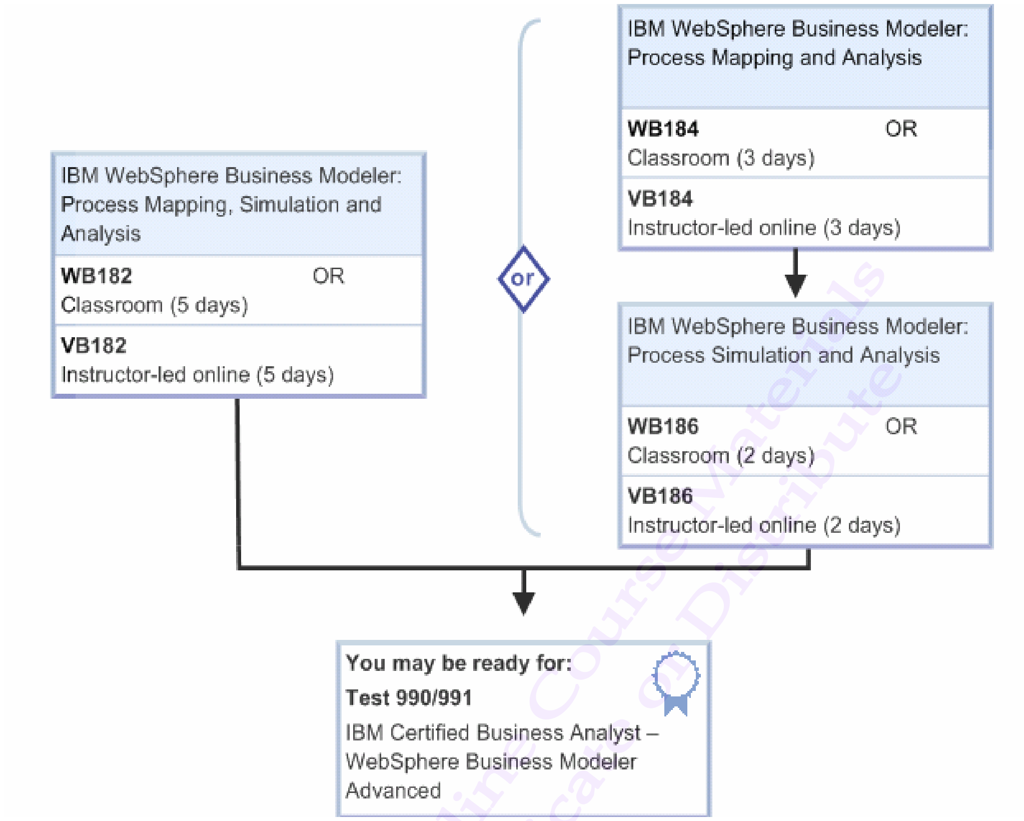

IBM WebSphere Business Modeler: Process Mapping, Simulation and Analysis
WB182 OR
Classroom (5 days)
VB182
Instructor-led online (5 days)
or
IBM WebSphere Business Modeler: Process Mapping and Analysis
WB184 OR
Classroom (3 days)
VB184
Instructor-led online (3 days)
IBM WebSphere Business Modeler: Process Simulation and Analysis
WB186 OR
Classroom (2 days)
VB186
Instructor-led online (2 days)
You may be ready for:
Test 990/991
IBM Certified Business Analyst – WebSphere Business Modeler Advanced

Figure 1-3. Modeler course roadmap VB1841.0

Notes:

For up-to-date Modeler course information, please visit http://www.ibm.com/developerworks/websphere/education/enablement/curriculum/c-wbi-modeler.html

Course evaluation

- On the final day of class, complete the electronic course evaluation

Figure 1-4. Course evaluation VB1841.0

Notes:

Unit 2. Introduction to business process management and WebSphere Business Modeler

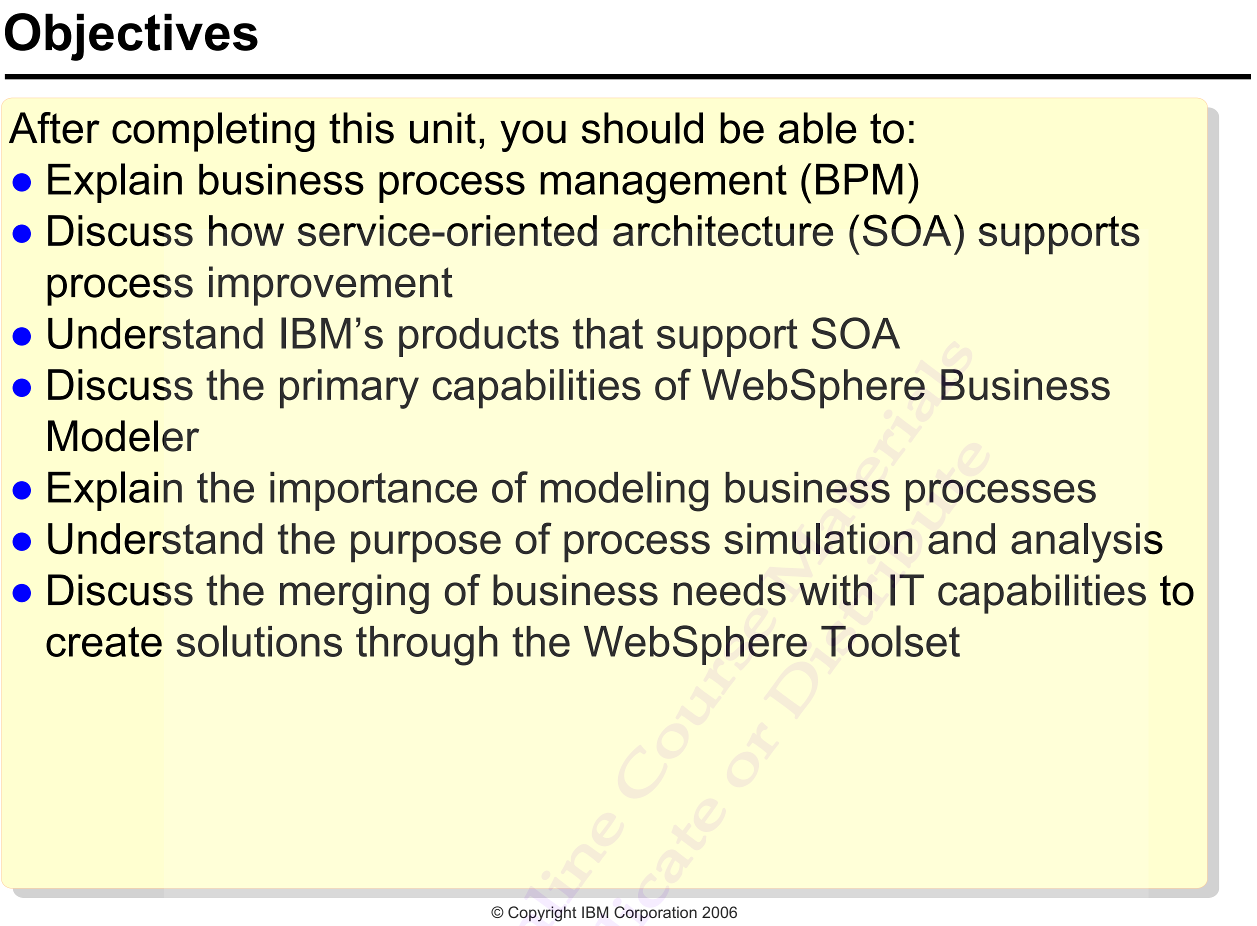
What this unit is about

This unit describes the introduction to business process management and WebSphere Business Modeler.

What you should be able to do

After completing this unit, you should be able to:

- Explain business process management (BPM)
- Discuss how service-oriented architecture (SOA) supports process improvement
- Describe IBM's products that support SOA
- Discuss the primary capabilities of WebSphere Business Modeler
- Explain the importance of modeling business processes
- Explain the purpose of process simulation and analysis
- Discuss the merging of business needs with IT capabilities to create solutions through the WebSphere Toolset



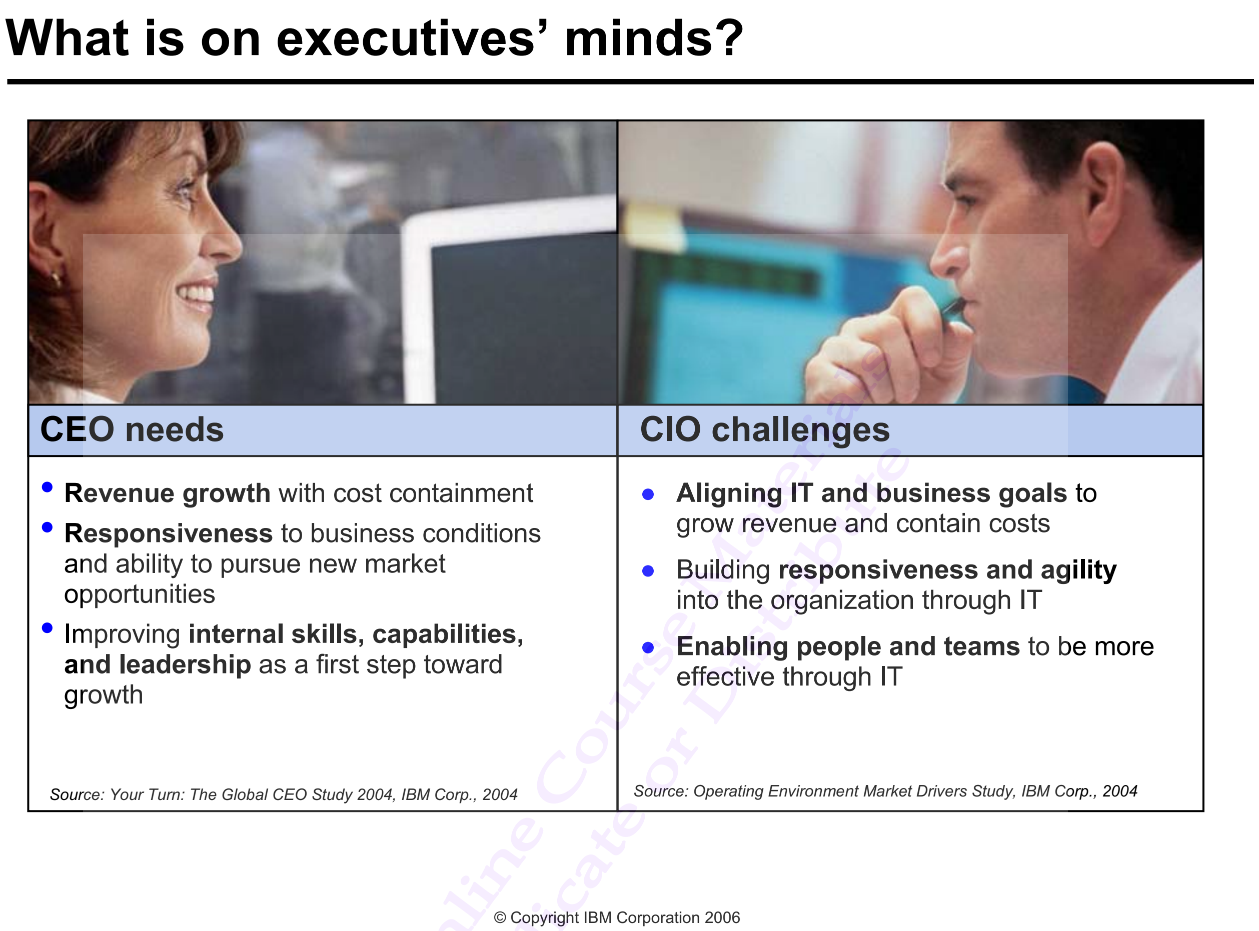
Objectives

After completing this unit, you should be able to:

- Explain business process management (BPM)
- Discuss how service-oriented architecture (SOA) supports process improvement
- Understand IBM’s products that support SOA
- Discuss the primary capabilities of WebSphere Business Modeler
- Explain the importance of modeling business processes
- Understand the purpose of process simulation and analysis
- Discuss the merging of business needs with IT capabilities to create solutions through the WebSphere Toolset

Figure 2-1. Objectives VB1841.0

Notes:



What is on executives' minds?

CEO needs

- **Revenue growth** with cost containment
- **Responsiveness** to business conditions and ability to pursue new market opportunities
- Improving **internal skills, capabilities, and leadership** as a first step toward growth

Source: Your Turn: The Global CEO Study 2004, IBM Corp., 2004

CIO challenges

- **Aligning IT and business goals** to grow revenue and contain costs
- Building **responsiveness and agility** into the organization through IT
- **Enabling people and teams** to be more effective through IT

Source: Operating Environment Market Drivers Study, IBM Corp., 2004

Figure 2-2. What is on executives' minds? VB1841.0

Notes:

What does business process management really mean?

- … **Business process management** (or **BPM**) refers to activities performed by organizations to manage and, if necessary, to improve their business processes. While such improvements are hardly new, software tools called business process management systems (BPM systems) have made such activities faster and cheaper. BPM systems monitor the execution of the business processes so that managers can analyze and change processes in response to data, rather than just a hunch. BPM differs from business process re-engineering, a management approach popular in the 1990s, in that it does not aim at on-off revolutionary changes to business processes, but at their continuous evolution. (Wikipedia)
- … ***B**usiness **p**rocess **m**anagement* … is a term that describes activities and events which are performed to optimize a business process. These activities are aided by software tools. These types of software tools are also called BPM tools. (Webopedia)
- **B**usiness **p**rocess **m**anagement (BPM) is a systematic approach to improving an organization's business processes. BPM activities seek to make business processes more effective, more efficient, and more capable of adapting to an ever-changing environment. (searchCIO)

Figure 2-3. What does business process management really mean? VB1841.0

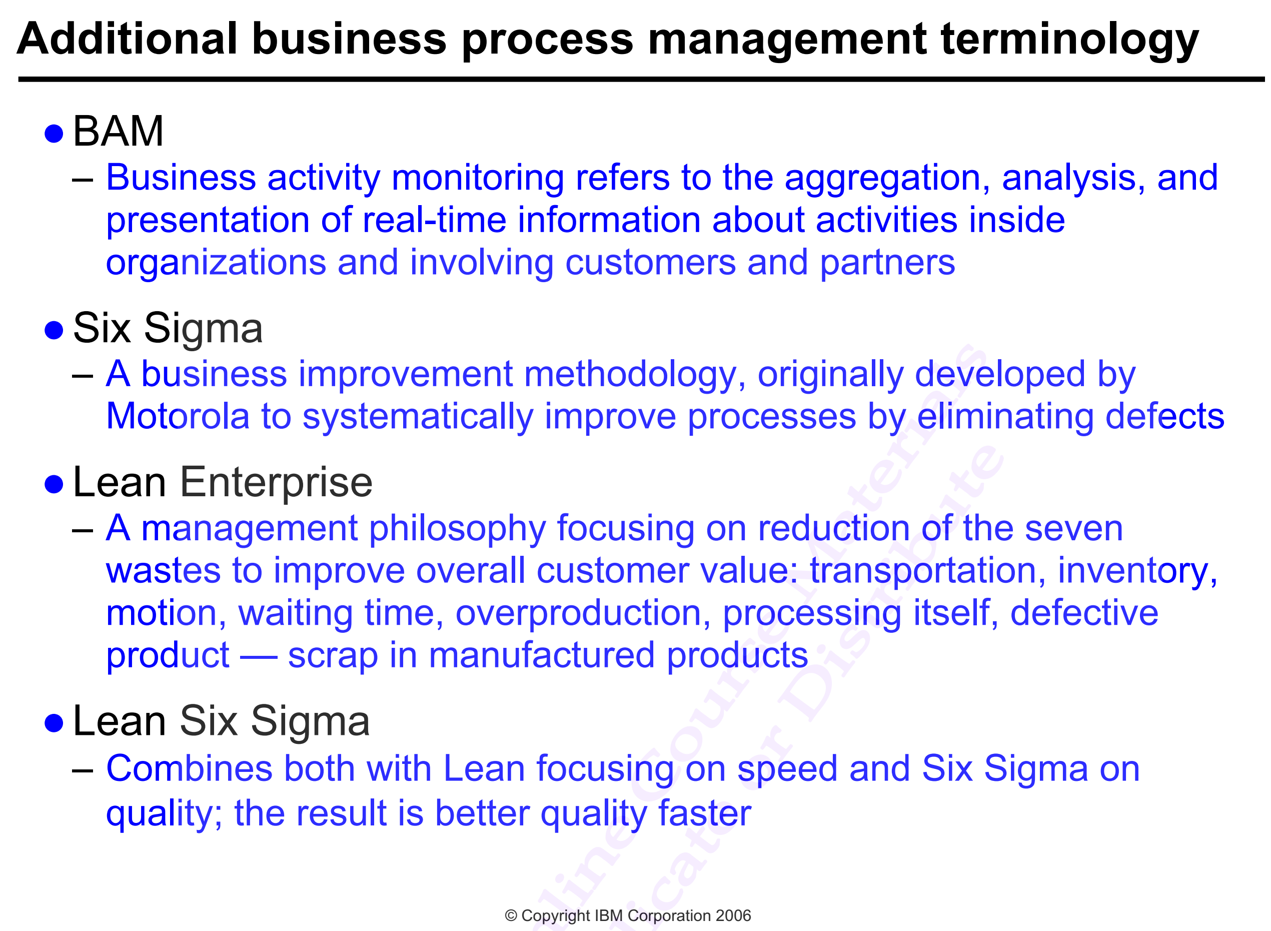
Notes:

BPM — the growing trend

- Business process management to the market
  - $106,000,000,000 (106 billion USD) on process management
    - Worldwide: user spending on IT by technology segment in 2007 — Gartner, Sept. 2005
  - BPM product sales reached between $520 and $543 million in 2003 — Gartner, 2003
  - BPM tools market grew 20% in 2003 to $543 million — Dataquest, 2003

Figure 2-4. BPM — the growing trend VB1841.0

Notes:



Additional business process management terminology

- BAM
  - Business activity monitoring refers to the aggregation, analysis, and presentation of real-time information about activities inside organizations and involving customers and partners
- Six Sigma
  - A business improvement methodology, originally developed by Motorola to systematically improve processes by eliminating defects
- Lean Enterprise
  - A management philosophy focusing on reduction of the seven wastes to improve overall customer value: transportation, inventory, motion, waiting time, overproduction, processing itself, defective product — scrap in manufactured products
- Lean Six Sigma
  - Combines both with Lean focusing on speed and Six Sigma on quality; the result is better quality faster

Figure 2-5. Additional business process management terminology VB1841.0

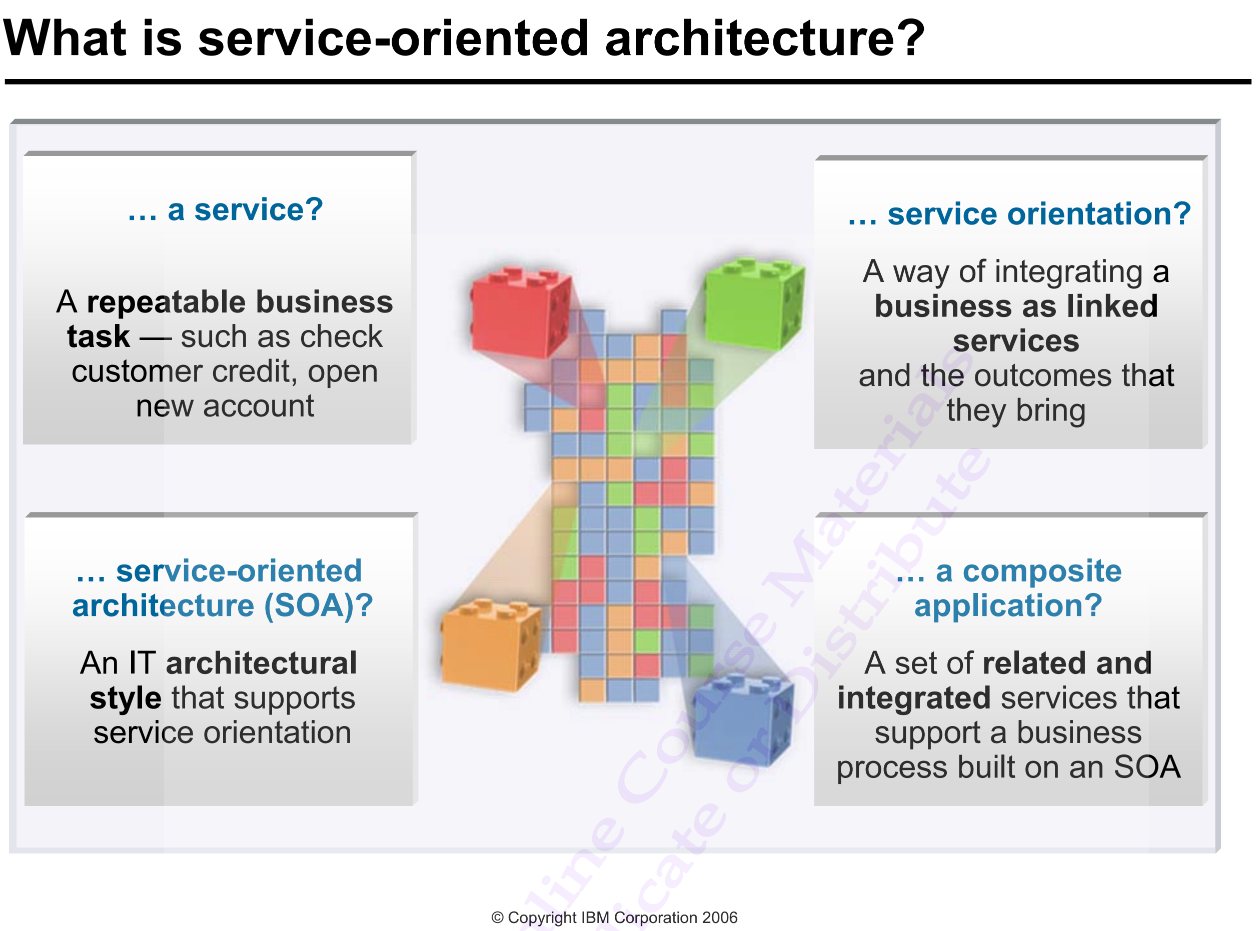
Notes:

IT tools and technologies

- IT tools and technologies are used in business process improvement efforts
  - Process modeling
  - Process simulation
  - Requirements definition
  - Workflow systems
  - Integration development tools
  - Process monitoring
  - Service-oriented architecture
- Service-oriented architecture (SOA) is a driving technology behind the increased interest in process improvement.

Figure 2-6. IT tools and technologies VB1841.0

Notes:



What is service-oriented architecture?

… a service?

A **repeatable business task** — such as check customer credit, open new account

… service orientation?

A way of integrating a **business as linked services** and the outcomes that they bring

… service-oriented architecture (SOA)?

An IT **architectural style** that supports service orientation

… a composite application?

A set of **related and integrated** services that support a business process built on an SOA

Figure 2-7. What is service-oriented architecture? VB1841.0

Notes:

You will start by looking at some base-line definitions so that everyone is talking in the same terms.

- First of all, what is a service?

  It is important to stress that you are talking about a part of a business process here. Do not think about software or IT. Think about what your company does on a day-to-day basis and break those business processes up into repeatable business tasks or components.

- Second, what is service orientation?

  Building on your definition of a service, service orientation is a way of integrating your business as linked services and, more importantly, the outcomes that they bring. You are still not talking about technology; you are talking about a thought process and a business philosophy.

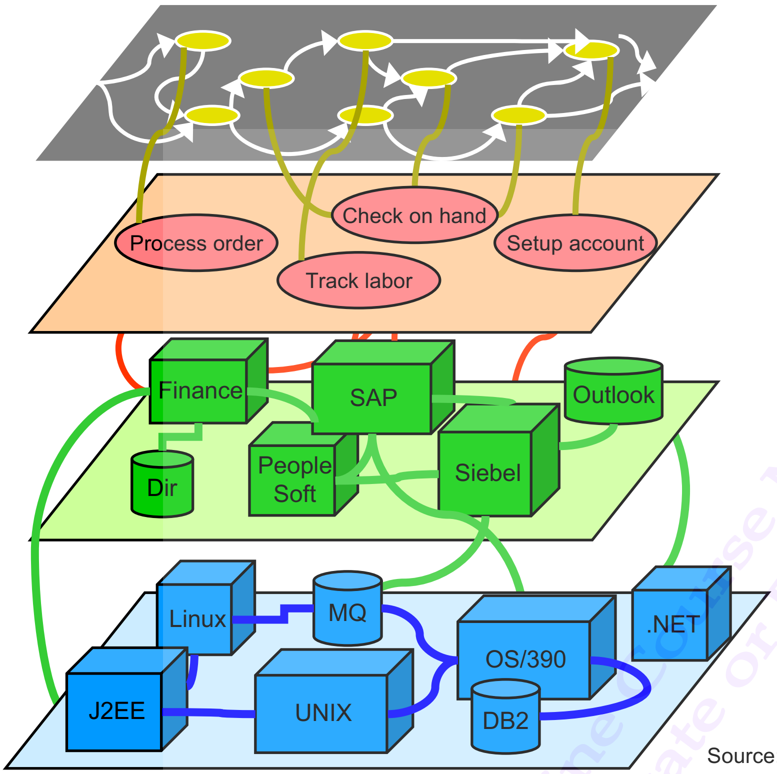
- What is SOA?

It is quite simply the IT architectural style that supports the service orientation thought process and makes it a reality.

- And finally, what is a composite application?

  It consists of actual running services that have been assembled and wired together to support what your business does. SOA helps make building and adjusting composite applications fast and easy.

Component-based development



Business process layer

- Cross functional end-to-end sales order process

Service layer

- Used to connect sales to customer, for example

Application layer

- Applications, components, software

Technology layer

- Hardware, network
- Connect J2EE to .NET

Source: CBDi Forum, `http://www.cbdiforum.com`

Figure 2-8. Component-based development VB1841.0

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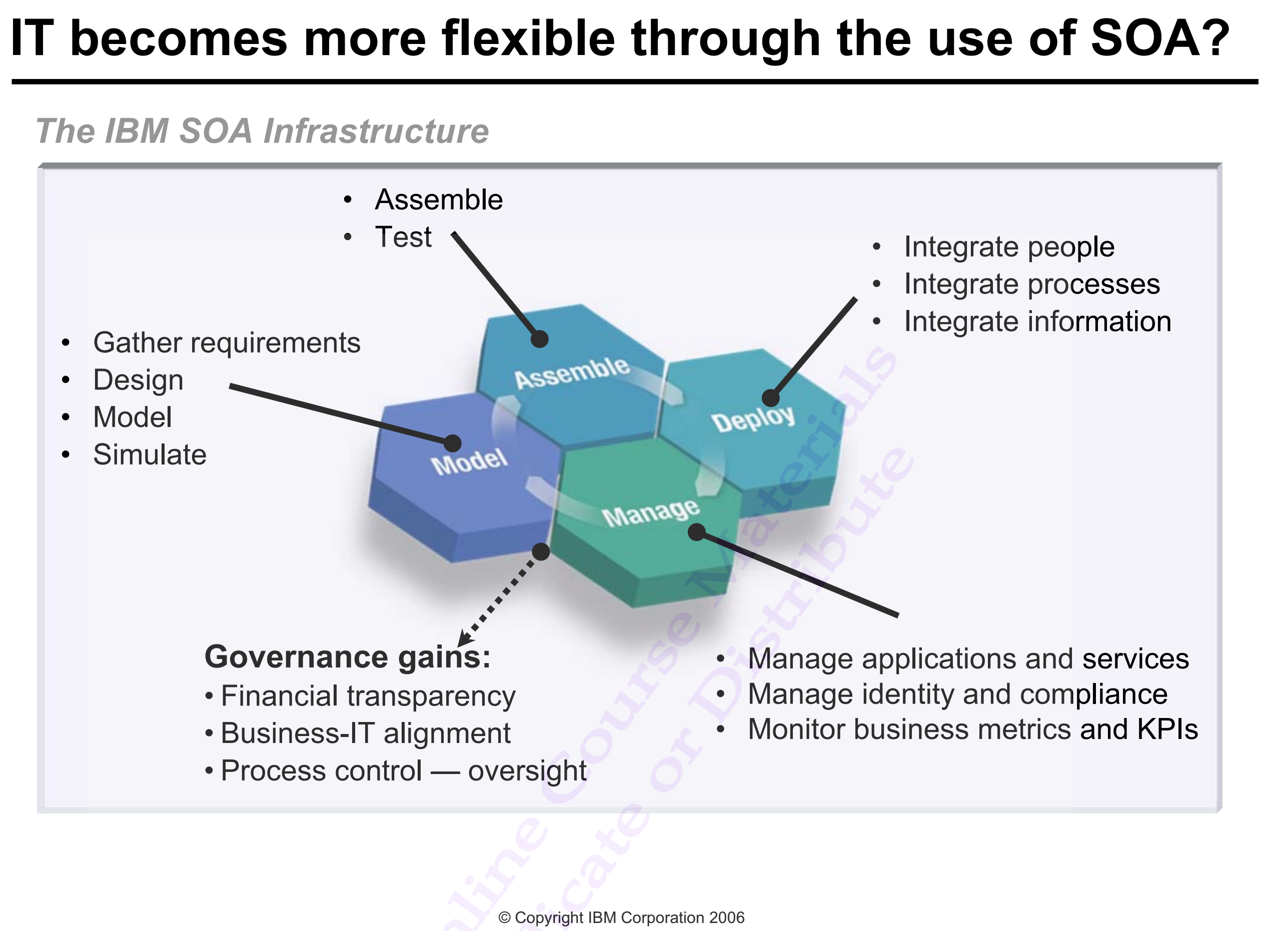
Notes:

CBD: component-based development

This relationship of business components and services as supported by IT can be best depicted as layers, each adding a level of definition needed to support the business processes where people accomplish the tasks necessary to deliver value to a customer. For the business analyst, the new service layer provides a good interface between the business process and all of the technology needed to support the business.



IT becomes more flexible through the use of SOA?

The IBM SOA Infrastructure

- Assemble
- Test

- Integrate people
- Integrate processes
- Integrate information

- Gather requirements
- Design
- Model
- Simulate

Governance gains:
- Financial transparency
- Business-IT alignment
- Process control — oversight

- Manage applications and services
- Manage identity and compliance
- Monitor business metrics and KPIs

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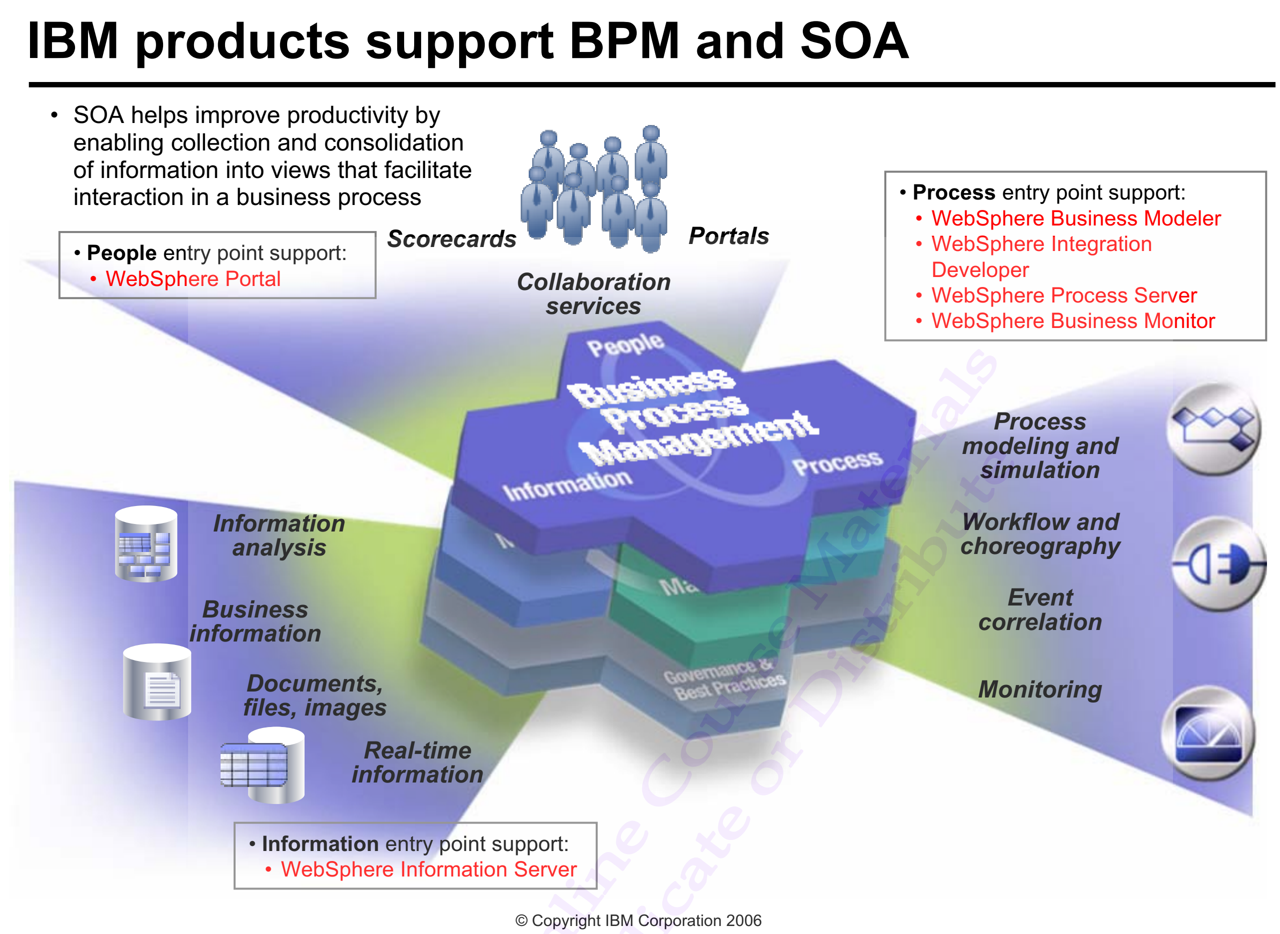
Figure 2-9. IT becomes more flexible through the use of SOA? VB1841.0

Notes:

Start in the model phase by gathering business requirements and designing business processes. Optimize the business processes by combining new and existing services. The assets are then deployed into a secure and integrated environment for integrating people, processes, and information. Once deployed, manage and monitor from both an IT and a business perspective. Information gathered during the manage phase is fed back for continuous process improvement. Underpinning all of these life cycle stages is governance which provides guidance and oversight for the SOA project.



IBM products support BPM and SOA

- SOA helps improve productivity by enabling collection and consolidation of information into views that facilitate interaction in a business process

- **People** entry point support:
  - WebSphere Portal

- **Process** entry point support:
  - WebSphere Business Modeler
  - WebSphere Integration Developer
  - WebSphere Process Server
  - WebSphere Business Monitor

- **Information** entry point support:
  - WebSphere Information Server

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Figure 2-10. IBM products support BPM and SOA VB1841.0

Notes:

The Wintergreen Report, “Services Oriented Architecture (SOA) Market Opportunities, Market Forecasts, and Market Strategies, 2006-2012” came out in July 2006.

IBM increased its market share to 46% in 2005, up from 2004. IBM has SOA business process management (BPM) initiatives that benefit companies by implementing streamlined processes, improved customer service, more effective compliance and risk management. Improved responsiveness to changing business conditions helped drive the results.

Based on extensive field experience, IBM has defined five entry points for businesses getting started with SOA. The entry points are divided into two categories: business-centric and IT-centric, and there are WebSphere products to help you with each entry point.

The business-centric entry points are:

- **People**

  - SOA helps you improve productivity by enabling you to collect and consolidate information into views that deliver information and facilitate interaction in the context of a business process.
  - The following WebSphere products support the SOA People entry point:
    - WebSphere Portal — the foundation of WebSphere Business Monitor
- **Process**
  - With SOA you can quickly deploy innovative business models with reusable processes, which means you can react fast to changing business needs.
  - The following WebSphere products support the SOA process entry point:
    - WebSphere Business Modeler
    - WebSphere Business Monitor
    - WebSphere Process Server
    - WebSphere Integration Developer
- **Information**
  - By delivering information as a service, SOA helps you improve business insight and reduce risk with trusted information services delivered in-line and in-context.
  - The following WebSphere products support the SOA Information entry point:
    - WebSphere Information Server

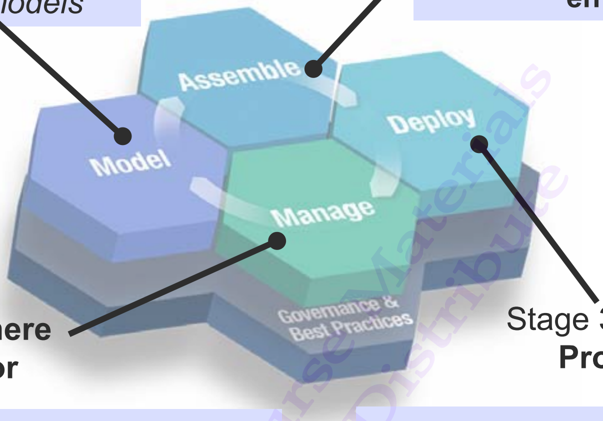
Not illustrated in the slide, The IT-centric entry points are:

- **Connectivity**
  - When you talk about SOA connectivity, you are talking about the underlying connectivity that supports business-centric SOA. Connectivity provides the ability to integrate service providers and consumers, and allows for the reuse of services across multiple channels. WebSphere allows you to connect everything inside and outside your company, which enables your SOA to deliver reliability and security with high performance and availability that spans newly developed Web services and complex heterogeneous environments.
  - The following WebSphere products support the SOA Connectivity entry point:
    - WebSphere Enterprise Service Bus (WebSphere ESB)
    - WebSphere Message Broker and WebSphere Transformation Extender (WebSphere TX) for Message Broker
    - WebSphere DataPower SOA Appliances
    - WebSphere MQ and MQ Extended Security Edition
    - WebSphere Adapters
- **Reuse**

- With SOA, you can cut costs, reduce cycle times, and expand access to core applications through reuse of services in various business applications. Use portfolio management to consider which assets you need to run your company. Identify high-value existing IT assets and service-enable them for reuse. Satisfy remaining business needs by creating new services. Finally, create a registry or repository to provide centralized access to and control of these reusable services.
- Some of the WebSphere products that support the SOA reuse entry point are:
  - WebSphere Application Server and WebSphere Application Server Community Edition
  - WebSphere Service Registry and Repository
  - WebSphere IP Multimedia Subsystem Connector (WebSphere IMS Connector)
  - WebSphere Extended Deployment
  - WebSphere Commerce

There is no "right" place to start with SOA. Where you start depends on your specific business needs. You can use any one, or any combination of, these entry points to approach SOA incrementally. The IBM SOA Self-Assessment can help you determine which entry points makes sense for you.

IBM's SOA life cycle stages



Stage 1 — **WebSphere Business Modeler**

Gather requirements
Design, model, simulate, and optimize business models

Stage 2 — **WebSphere Integration Developer**

Discover, assemble, test
Standards-based development environment

Stage 3 — **WebSphere Process Server**

Integrated deployment of policies and workflow
Support human-intensive process steps with system-automated steps and information flows

Stage 4 — **WebSphere Business Monitor**

Business monitoring for coordinated action
Analytics and optimization of processes
Real-time visibility into business processes, enabling process intervention and continuous improvement

Figure 2-11. IBM's SOA life cycle stages VB1841.0

Notes:

IBM delivers end-to-end business process management capabilities that support each stage of the business process life cycle.

Starting with stage 1 — WebSphere Business Modeler:

This Model phase is for gathering business requirements, designing, simulating, and optimizing desired business processes. That way, they are sure about setting the right steps in motion before further action is taken.

Moving to stage 2 — WebSphere Integration Developer:

Once they have optimized the business process, they implement it by combining newly created and reused existing services to form composite applications.

In the Deploy stage, stage 3 — WebSphere Process Server:

WebSphere Process Server, for flexible deployment of business processes, makes plug-and-play components a reality.

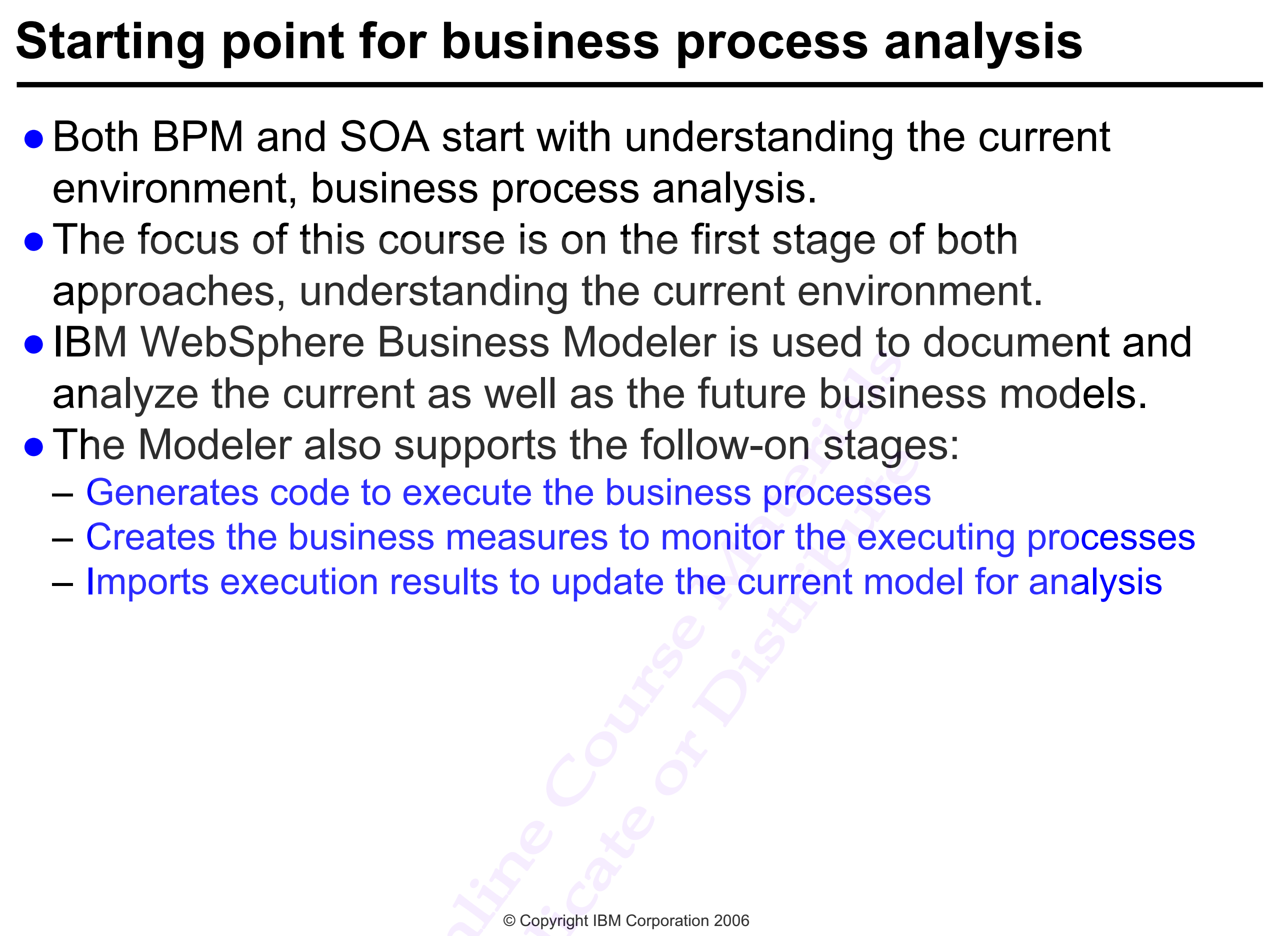
The assets are then deployed into a secure and integrated environment taking advantage of specialized services that provide support for integrating people, processes and information. This level of integration helps ensure that all the key elements of your company are connected and working together.

Finally, in the manage stage, stage 4 — WebSphere Business Monitor:

WebSphere Business Monitor real-time visibility into process performance enables process intervention and continuous improvement.

Once deployed, customers manage and monitor the composite applications and underlying resources from both an IT and a business perspective. Information gathered during the manage phase is used to gain real-time insight into business processes, enabling better business decisions and feeding information back into the life cycle for continuous process improvement.

Underpinning all of these life cycle stages is governance and best practices, which provide guidance and oversight for the SOA project.

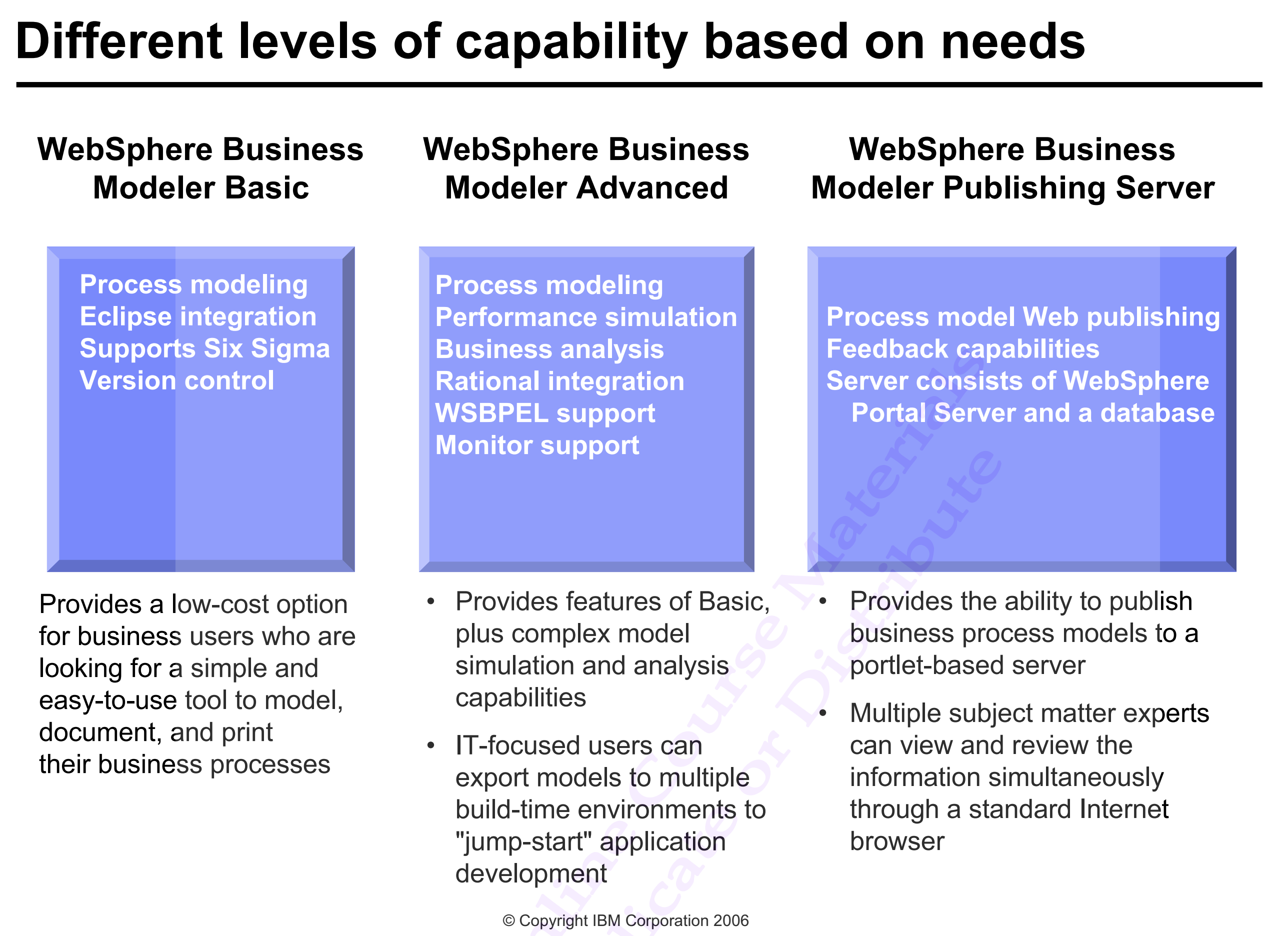


Starting point for business process analysis

- Both BPM and SOA start with understanding the current environment, business process analysis.
- The focus of this course is on the first stage of both approaches, understanding the current environment.
- IBM WebSphere Business Modeler is used to document and analyze the current as well as the future business models.
- The Modeler also supports the follow-on stages:
  - Generates code to execute the business processes
  - Creates the business measures to monitor the executing processes
  - Imports execution results to update the current model for analysis

Figure 2-12. Starting point for business process analysis VB1841.0

Notes:



Different levels of capability based on needs

WebSphere Business Modeler Basic

- Process modeling
- Eclipse integration
- Supports Six Sigma
- Version control

Provides a low-cost option for business users who are looking for a simple and easy-to-use tool to model, document, and print their business processes

WebSphere Business Modeler Advanced

- Process modeling
- Performance simulation
- Business analysis
- Rational integration
- WSBPEL support
- Monitor support

- Provides features of Basic, plus complex model simulation and analysis capabilities
- IT-focused users can export models to multiple build-time environments to "jump-start" application development

WebSphere Business Modeler Publishing Server

- Process model Web publishing
- Feedback capabilities
- Server consists of WebSphere Portal Server and a database

- Provides the ability to publish business process models to a portlet-based server
- Multiple subject matter experts can view and review the information simultaneously through a standard Internet browser

Figure 2-13. Different levels of capability based on needs VB1841.0

Notes:

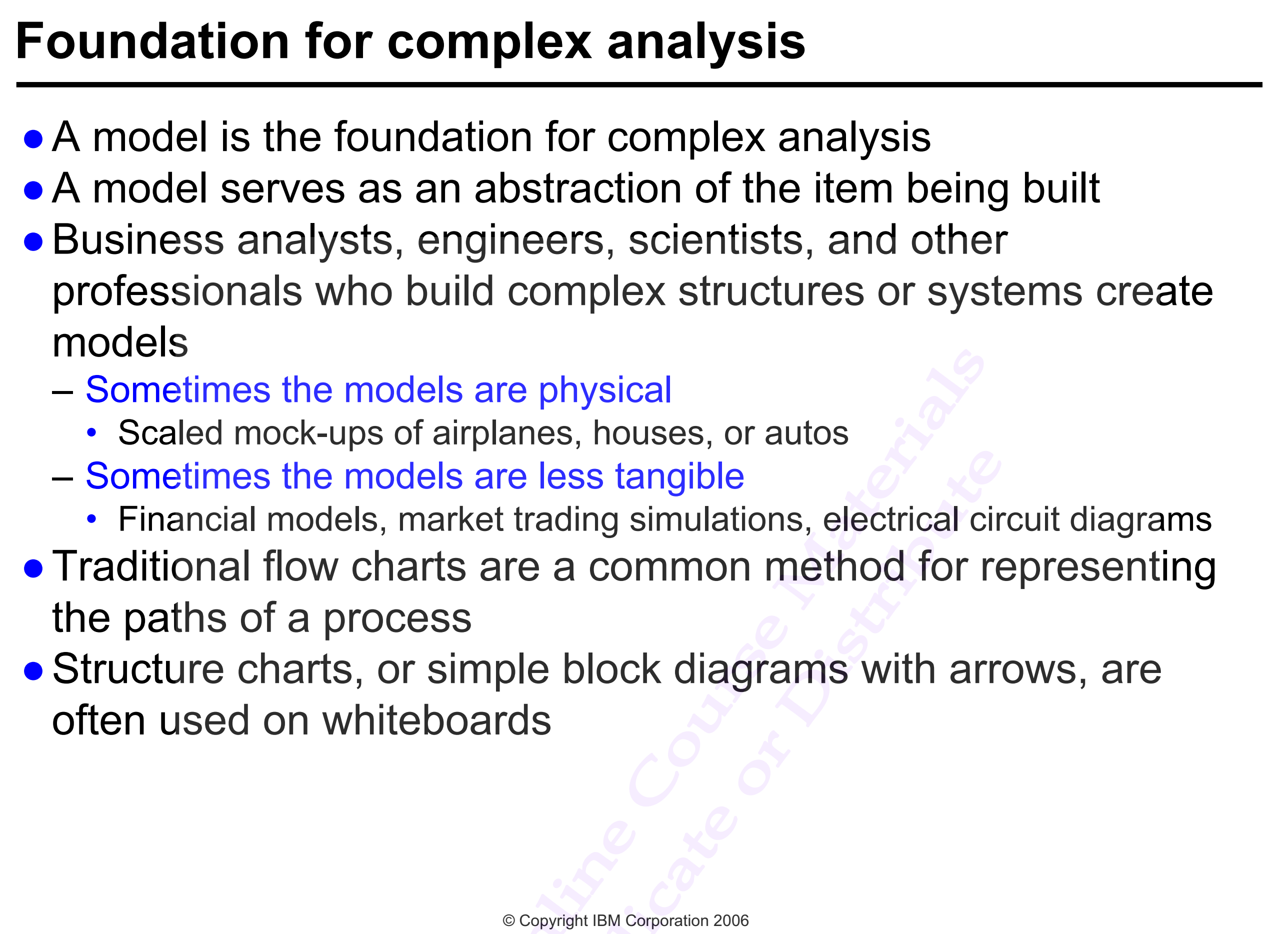
WebSphere Business Modeler has three primary forms, each with a specific purpose. The **Basic Edition** is for those companies with several modelers that need to document the business processes without the need to do the analysis. The **Advanced Edition** adds the capability to perform process analysis for those analysts with more responsibility. The **Publishing Edition** is a package that includes one copy of WebSphere Business Modeler Publishing Server, and multiple licenses of the WebSphere Business Modeler Advanced.

Starting with the process

- WebSphere Business Modeler is the first product in the SOA life cycle
- The business modeler can be used for:
  - Documenting current processes
  - Analyzing the performance of current processes
  - Identifying problems area in a process
  - Facilitating team and user discussions
  - Gathering process related business requirements
  - Designing new business process
  - Evaluating different design alternatives
  - Analyzing the performance of future process designs
  - Providing the base for future process documentation
  - Adding technology dependent configuration parameters
  - Generating code for Web-based workflow systems
  - Receiving process related results from production

Figure 2-14. Starting with the process VB1841.0

Notes:



Foundation for complex analysis

- A model is the foundation for complex analysis
- A model serves as an abstraction of the item being built
- Business analysts, engineers, scientists, and other professionals who build complex structures or systems create models
  - Sometimes the models are physical
    - Scaled mock-ups of airplanes, houses, or autos
  - Sometimes the models are less tangible
    - Financial models, market trading simulations, electrical circuit diagrams
- Traditional flow charts are a common method for representing the paths of a process
- Structure charts, or simple block diagrams with arrows, are often used on whiteboards

Figure 2-15. Foundation for complex analysis VB1841.0

Notes:

This puts a great deal of import on the model of the process — not on simply mapping a process.

- Discuss the difference in modeling and mapping as you use the terms
- Models help people understand complex systems for discussion and analysis. You can also use tools like simulation to test new ideas on models before you spend development dollars
- There are also many different types of models that are interrelated with different purposes (documentation, analysis, development, performance).

Boeing 747 Jumbo Jet: Developed from models

- Boeing produced more than 75,000 engineering drawings when the first 747 Jumbo Jet was designed in the 1960s.
- Why?
  - They allowed everyone on the project to have the same understanding of what they were building
  - Drawings provided views of different aspects of the airplane, which made building it manageable
- They were building a complex machine that had to be done right.
  - More than 6,000,000 parts — hundreds of thousands of pounds per plane
  - Wiring runs more than 170 miles
  - Cockpit contains hundreds of control items
  - Carries hundreds of passengers thousands of miles non-stop
    - More than a million 747 passengers took flights in the first six months of operation.

Jet building steps:

1. **Drawing**
2. **Model**
3. **Build mock-up**
4. **Build a prototype**
5. **QA on the design**
6. **Build a full-sized jet**

Business analyst's steps:

1. **Discover and gather business process information**
2. **Build model**
3. **Analyze model — simulation**
4. **Redesign business process**

Figure 2-16. Boeing 747 Jumbo Jet: Developed from models VB1841.0

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Notes:

Boeing could not design and build the 747 without engineering drawings.

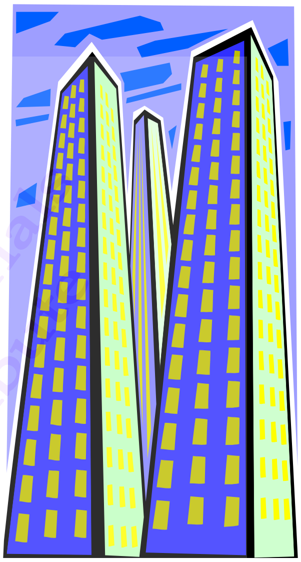
- They allowed everyone on the project to have the same understanding of what they were building because they are not all in the same physical location.
- They provide views of different aspects of the airplane, which makes building it manageable because individual sections are built in multiple locations.

When do you need to model something?

- Modeling is the standard approach in engineering to
  - Manage complexity
  - Mitigate risk
- Software development is the same as every kind of engineering in this respect

Well, maybe
you should not

But then, maybe
you should



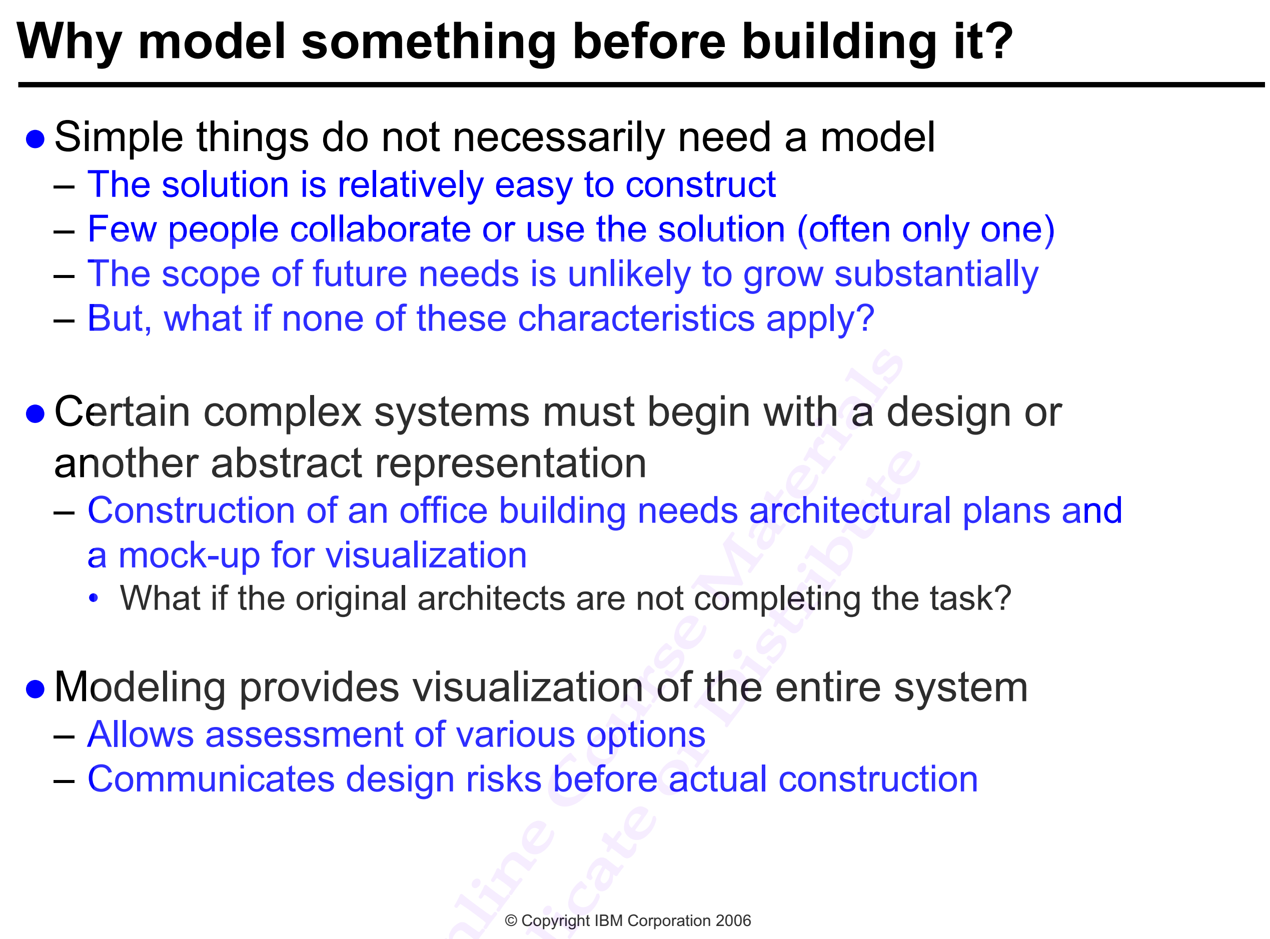
Now, you ***must***

Figure 2-17. When do you need to model something? VB1841.0

Notes:

Modeling lets you manage complexity and risk.

- Not all projects require models in order to be successful.
- The more complex a project, the more it needs models.
- Software is no different from every other kind of engineering, in this respect.



Why model something before building it?

- Simple things do not necessarily need a model
  - The solution is relatively easy to construct
  - Few people collaborate or use the solution (often only one)
  - The scope of future needs is unlikely to grow substantially
  - But, what if none of these characteristics apply?

- Certain complex systems must begin with a design or another abstract representation
  - Construction of an office building needs architectural plans and a mock-up for visualization
    - What if the original architects are not completing the task?

- Modeling provides visualization of the entire system
  - Allows assessment of various options
  - Communicates design risks before actual construction

Figure 2-18. Why model something before building it? VB1841.0

Notes:

The degree of complexity and cost determine the need for models. The more complex and expensive a system, the greater the need for understanding the possible outcomes before beginning the development. It is important to determine if the new system will provide the function or improvement before any development dollars are spent.

Start with the business process

- A complete business process includes all the manual and automated activities.

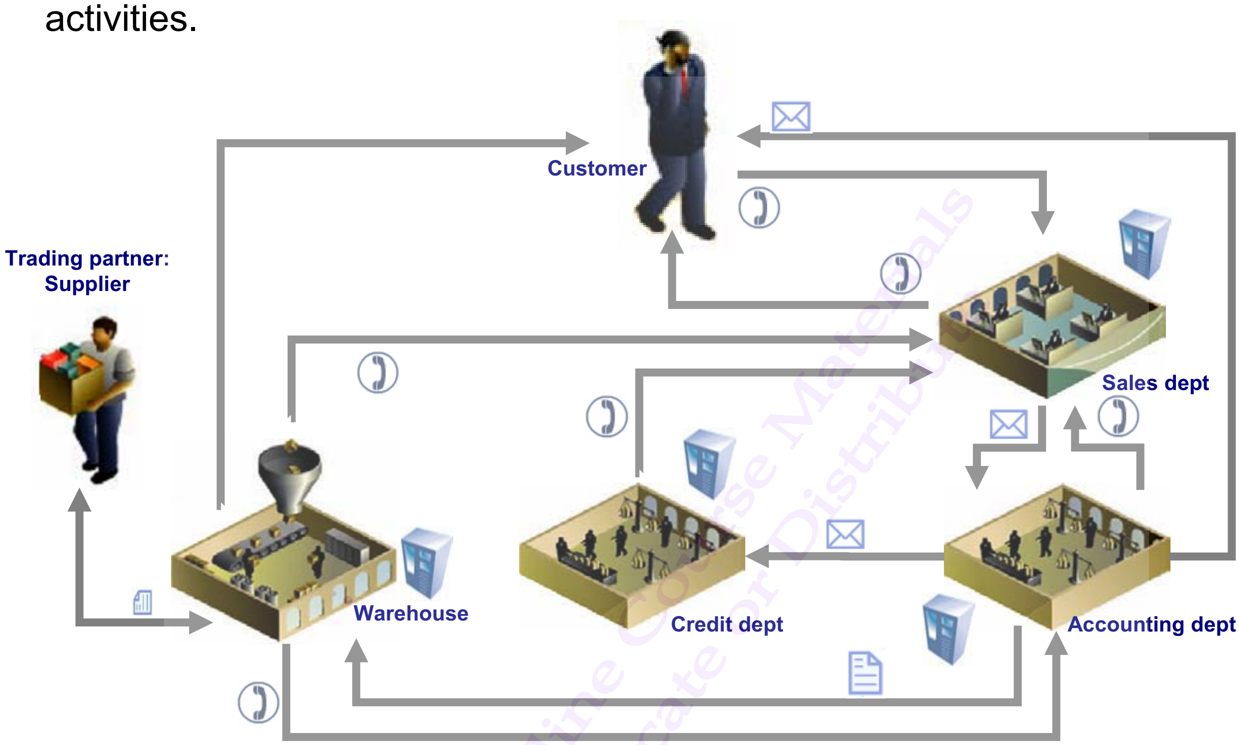


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Figure 2-19. Start with the business process VB1841.0

Notes:

A complete business process includes all the manual and automated activities.

Understand and manage core business processes

- One-dimensional flow charts or models miss key attributes
  - Actual business processes have a flow of work element, and more
- Organizational and business information are key attributes
  - How long does it take?
  - How much does it cost?
  - Who provides the service?
  - What policies, procedures, and business rules apply?
  - When is the process efficiency optimized?
- Effective business processes should be documented and assist in communicating organizational change to the enterprise
  - Once documented and shared with the organization, the process needs to be monitored and updated to provide peak resource performance
  - Corporate governance
    - Implementing controls to help ensure legal compliance with the Sarbanes-Oxley Act for accurate financial forecasting and reporting

Figure 2-20. Understand and manage core business processes VB1841.0

Notes:

Managing change requires a solid understanding of what you do and the interrelationships of the various elements of the enterprise. The questions are no longer about the technology but about the effect on the business itself.

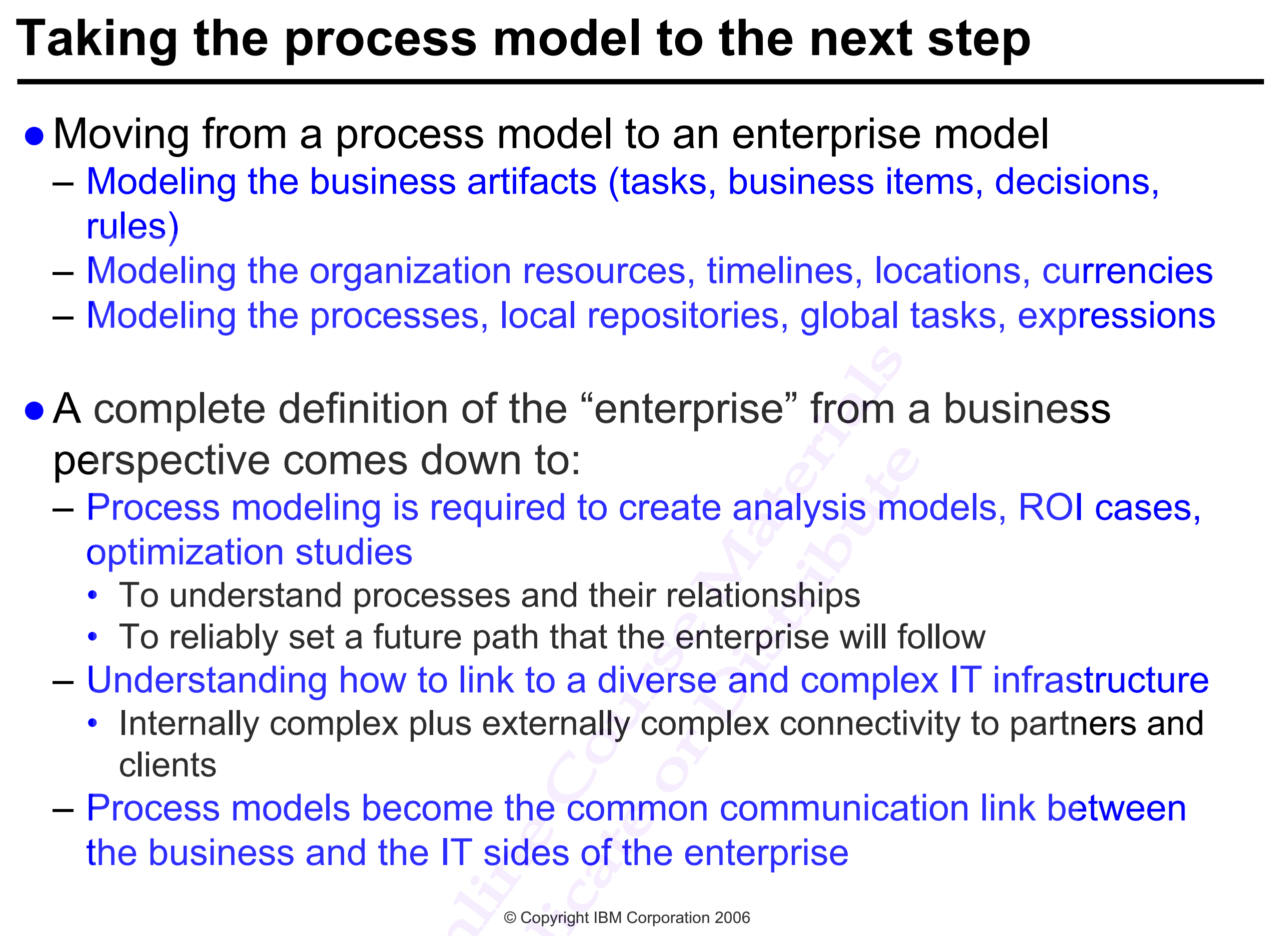
Why model business processes?

- Business process models serve many purposes, including:
  - Documenting existing procedures
  - Determining requirements for staff, systems, and facilities
  - Planning changes to existing processes and systems
  - Testing and analyzing existing and proposed processes
  - Identifying defects in your processes (bottlenecks, and so forth)
  - Process model data can support other business applications that rely on this information
    - Workflow, policy and procedure documentation, application development
- Visually represents an organization’s flow of work currently (as-is) and allows “what if?” for future (to-be) designs
  - To understand what it takes to complete the activities
- Effective models need a well designed modeling structure
  - Ensures consistent and complete representation of information
    - Including normal operations, alternatives, and exceptions to standards

Figure 2-21. Why model business processes? VB1841.0

Notes:

Why the process layer — communication of all parties both business and technology, a solid foundation for the future responsiveness of the enterprise to change. Today’s software systems are no longer simple like the dog house; they are more complicated like the skyscraper. It is very difficult to understand them without a model. They are also very expensive to implement; therefore it is important to understand the outcome before you start to build them.



Taking the process model to the next step

- Moving from a process model to an enterprise model
  - Modeling the business artifacts (tasks, business items, decisions, rules)
  - Modeling the organization resources, timelines, locations, currencies
  - Modeling the processes, local repositories, global tasks, expressions
- A complete definition of the “enterprise” from a business perspective comes down to:
  - Process modeling is required to create analysis models, ROI cases, optimization studies
    - To understand processes and their relationships
    - To reliably set a future path that the enterprise will follow
  - Understanding how to link to a diverse and complex IT infrastructure
    - Internally complex plus externally complex connectivity to partners and clients
  - Process models become the common communication link between the business and the IT sides of the enterprise

Figure 2-22. Taking the process model to the next step VB1841.0

Notes:

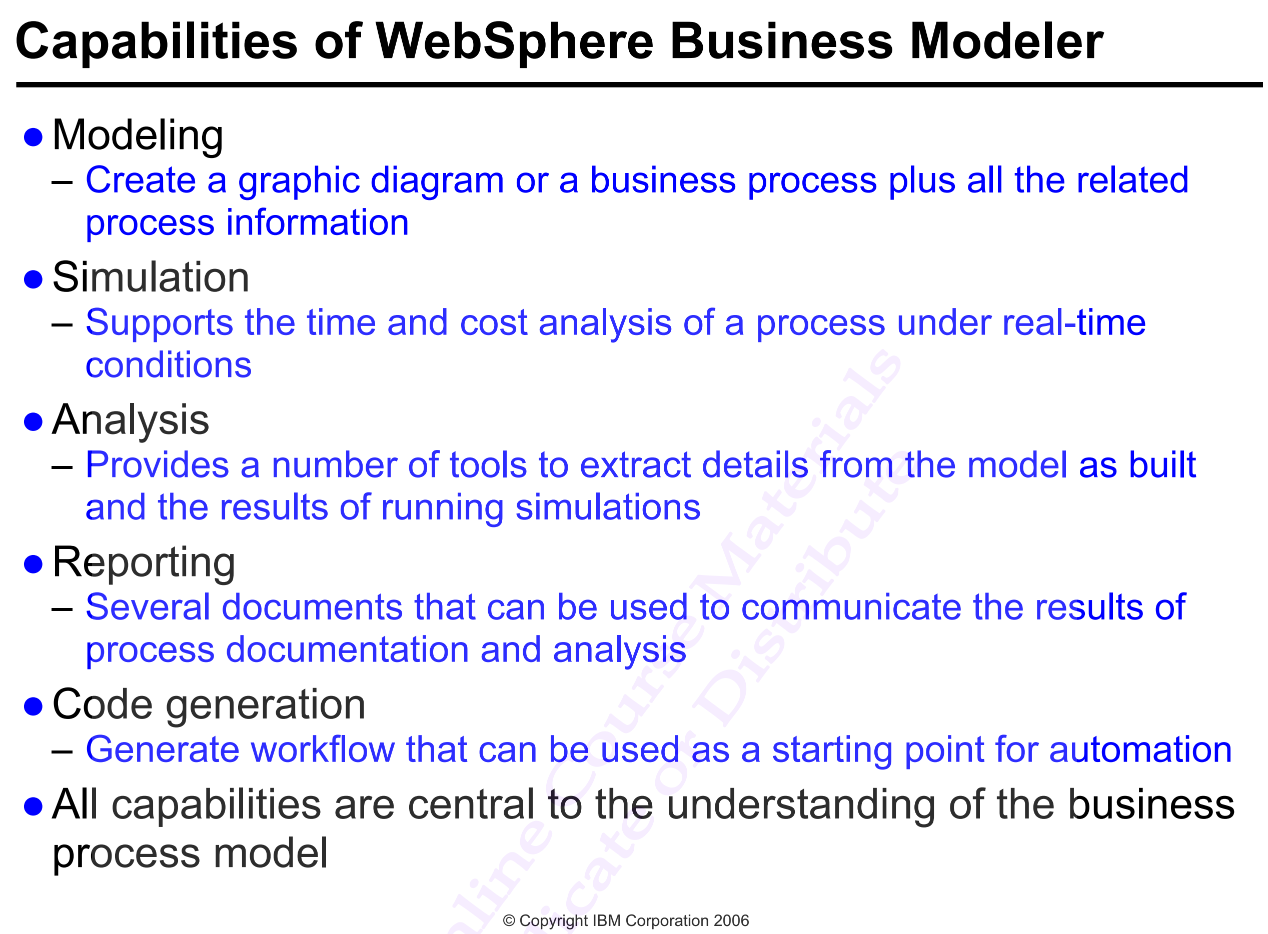
A multidimensional business model

- Process model — what work is done
  - Provides the pictorial representation of the process model
- Data model — what is worked on
  - Provides a view of data and objects used in a business process
- Resource model — who does the work
  - Defines the resource types and instances associated to the model
- Organization model — how process participants are organized
  - Definition and structure of the organization and associated resources
- Analysis model — what is analyzed
  - Definition of key process metrics and attributes analyzed in both a static and dynamic manner
- Collaboration model — how analysts share work
  - Allows for both model and deployment time collaboration on a process model
- Business measures model — what is to be monitored
  - Definition of key performance indicators (KPIs) and metrics to measure system and process performance triggers

Figure 2-23. A multidimensional business model VB1841.0

Notes:

Unlike one big drawing of a business process, the modeler uses several different models to represent the different aspects of a business process. Working together the different models provide a complete representation of the business process.

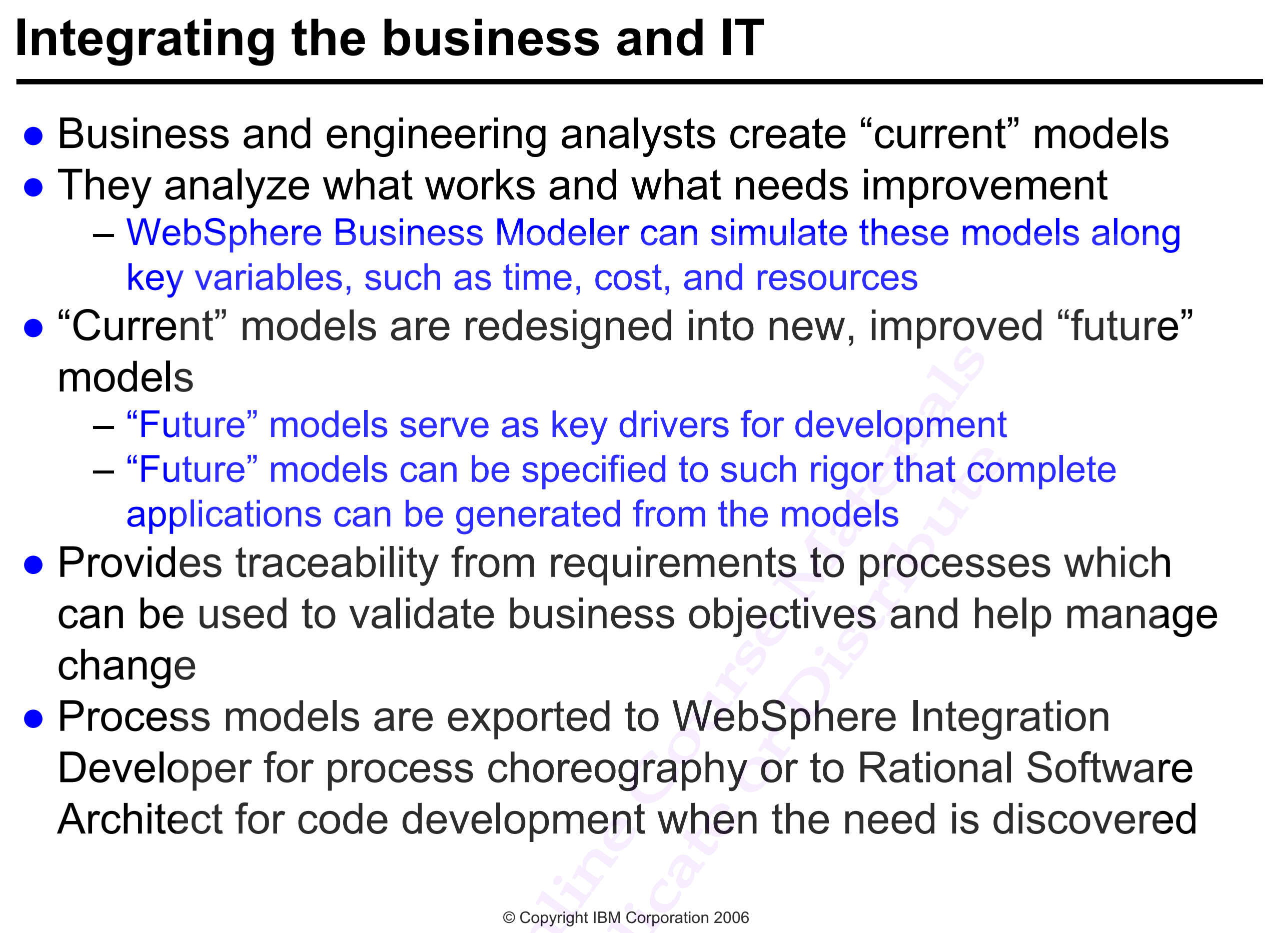


Capabilities of WebSphere Business Modeler

- Modeling
  - Create a graphic diagram or a business process plus all the related process information
- Simulation
  - Supports the time and cost analysis of a process under real-time conditions
- Analysis
  - Provides a number of tools to extract details from the model as built and the results of running simulations
- Reporting
  - Several documents that can be used to communicate the results of process documentation and analysis
- Code generation
  - Generate workflow that can be used as a starting point for automation
- All capabilities are central to the understanding of the business process model

Figure 2-24. Capabilities of WebSphere Business Modeler VB1841.0

Notes:



Integrating the business and IT

- Business and engineering analysts create “current” models
- They analyze what works and what needs improvement
  - WebSphere Business Modeler can simulate these models along key variables, such as time, cost, and resources
- “Current” models are redesigned into new, improved “future” models
  - “Future” models serve as key drivers for development
  - “Future” models can be specified to such rigor that complete applications can be generated from the models
- Provides traceability from requirements to processes which can be used to validate business objectives and help manage change
- Process models are exported to WebSphere Integration Developer for process choreography or to Rational Software Architect for code development when the need is discovered

Figure 2-25. Integrating the business and IT VB1841.0

Notes:

The process model now becomes the common communication vehicle between the business and IT. Plus the model that is used to describe the business can be used into the development cycle.

Integrating with IBM Rational RequisitePro

- IBM Rational RequisitePro
  - Allows the business (executives, analysts, architects) to capture the high-level business goals (objectives, strategy) and business rules needed to improve the business
- Integration feature
  - Allows creating of process model elements in Modeler to fulfill the requirements (business goals, tasks) defined in RequisitePro and associating of process model elements with requirements
  - Provides traceability from requirements to processes which can be used to validate business objectives and help manage the change

Figure 2-26. Integrating with IBM Rational RequisitePro VB1841.0

Notes:

Linking requirements with Modeler elements

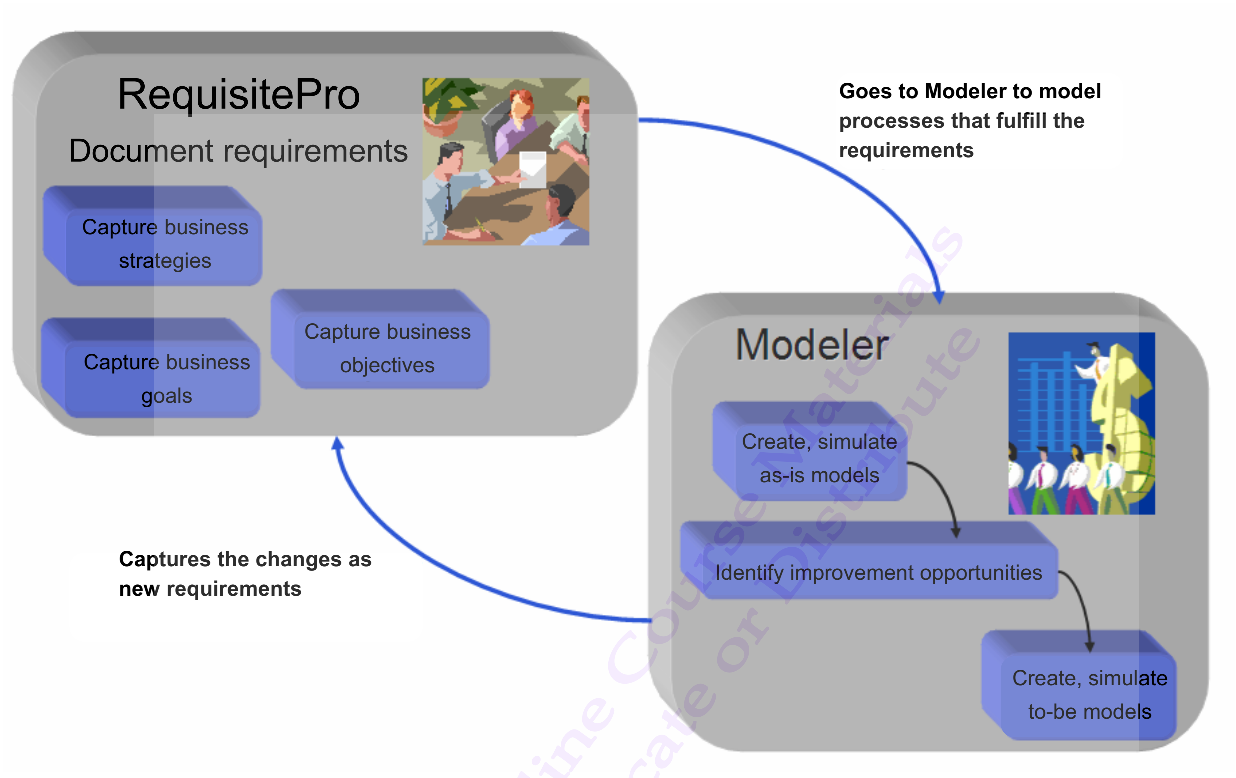

RequisitePro
Document requirements
Capture business strategies
Capture business goals
Capture business objectives
Goes to Modeler to model processes that fulfill the requirements
Modeler
Create, simulate as-is models
Identify improvement opportunities
Create, simulate to-be models
Captures the changes as new requirements

Figure 2-27. Linking requirements with Modeler elements VB1841.0

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Notes:

The Rational RequisitePro integration provides the Requirement perspective and a set of Requirement views that you can add to WebSphere Business Modeler. With the perspective or the views, you will see the changes that you made in Rational RequisitePro in WebSphere Business Modeler after you refresh the views in WebSphere Business Modeler. Similarly, you will see the changes that you made in the Rational RequisitePro integration views in Rational RequisitePro after you refresh Rational RequisitePro.

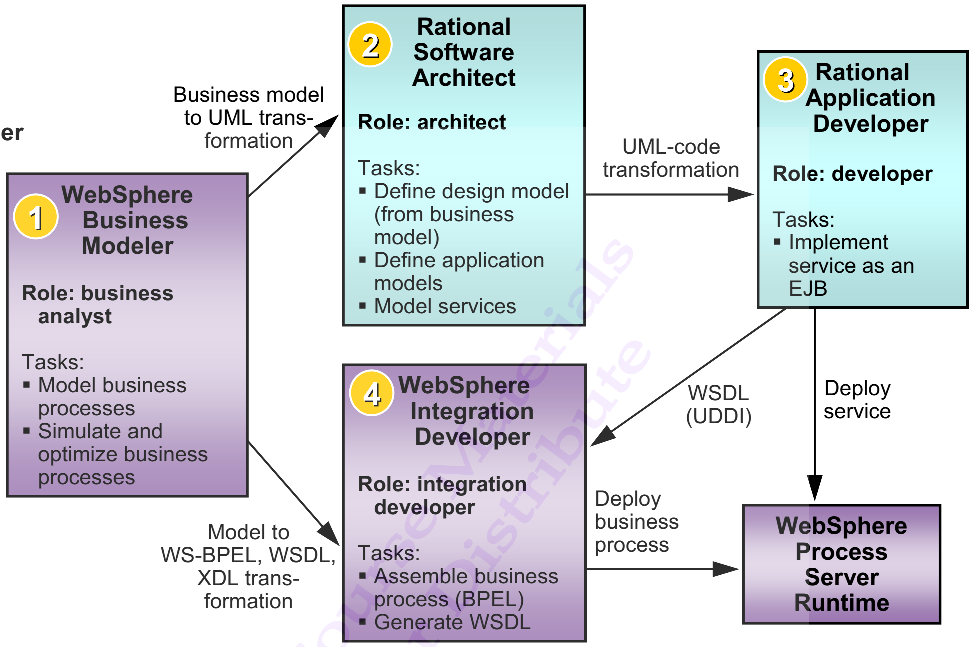
Modeler starts the development process

User roles

1. **Business analyst**
2. **Architect**
3. **Developer**
4. **Integration developer**

Tools to use

1. **WebSphere Business Modeler**
2. **Rational Software Architect**
3. **Rational Application Developer**
4. **WebSphere Integration Developer**



1 **WebSphere Business Modeler**

Role: business analyst

Tasks:
- Model business processes
- Simulate and optimize business processes

Business model to UML trans-formation

2 **Rational Software Architect**

Role: architect

Tasks:
- Define design model (from business model)
- Define application models
- Model services

UML-code transformation

3 **Rational Application Developer**

Role: developer

Tasks:
- Implement service as an EJB

WSDL (UDDI)

Deploy service

Model to WS-BPEL, WSDL, XDL trans-formation

4 **WebSphere Integration Developer**

Role: integration developer

Tasks:
- Assemble business process (BPEL)
- Generate WSDL

Deploy business process

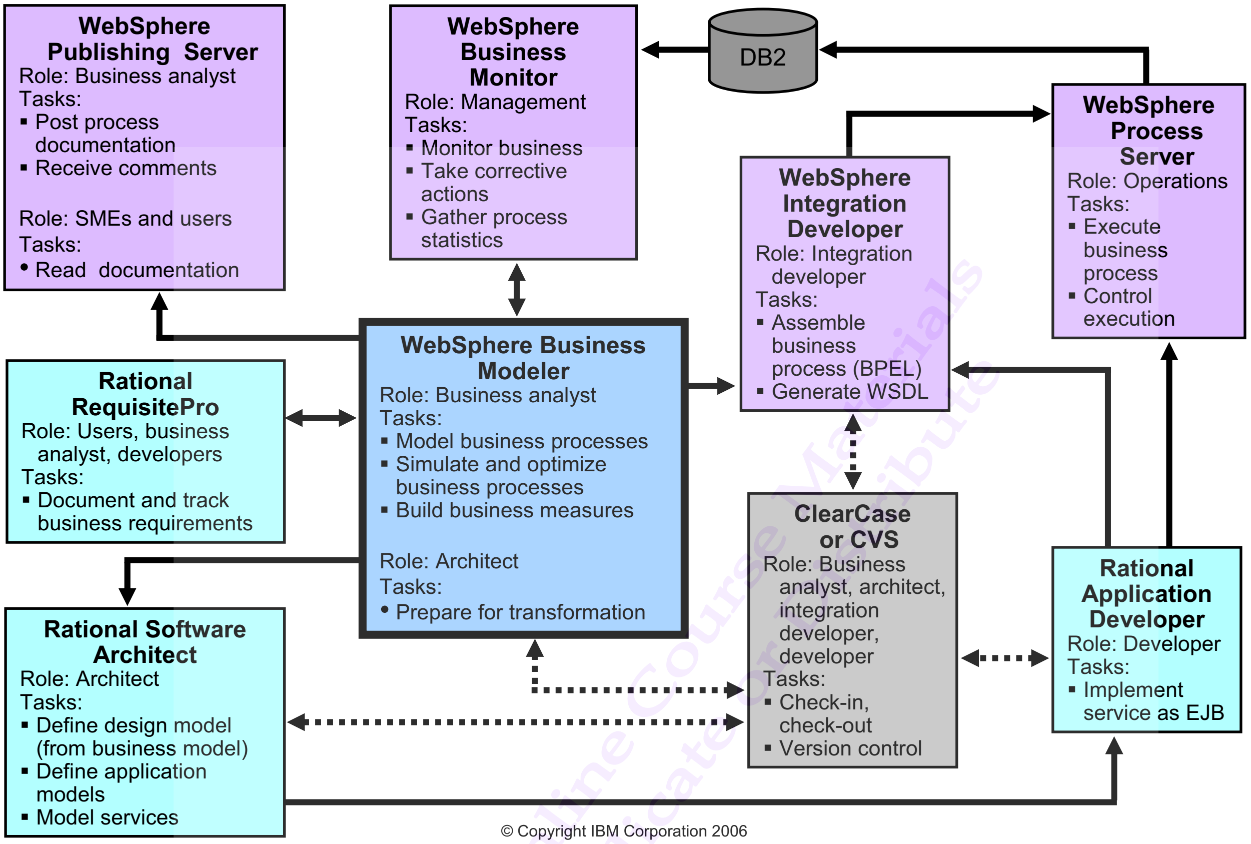
WebSphere Process Server Runtime

It is not unusual for one person to use **Modeler** and **WebSphere Integration Developer**, or **Rational Software Architect** and **Rational Application Developer**

Figure 2-28. Modeler starts the development process VB1841.0

Notes:

Modeler and its interfaces to related products



WebSphere Publishing Server
Role: Business analyst
Tasks:
- Post process documentation
- Receive comments

Role: SMEs and users
Tasks:
- Read documentation

WebSphere Business Monitor
Role: Management
Tasks:
- Monitor business
- Take corrective actions
- Gather process statistics

WebSphere Process Server
Role: Operations
Tasks:
- Execute business process
- Control execution

WebSphere Integration Developer
Role: Integration developer
Tasks:
- Assemble business process (BPEL)
- Generate WSDL

Rational RequisitePro
Role: Users, business analyst, developers
Tasks:
- Document and track business requirements

WebSphere Business Modeler
Role: Business analyst
Tasks:
- Model business processes
- Simulate and optimize business processes
- Build business measures

Role: Architect
Tasks:
- Prepare for transformation

ClearCase or CVS
Role: Business analyst, architect, integration developer, developer
Tasks:
- Check-in, check-out
- Version control

Rational Application Developer
Role: Developer
Tasks:
- Implement service as EJB

Rational Software Architect
Role: Architect
Tasks:
- Define design model (from business model)
- Define application models
- Model services

Figure 2-29. Modeler and its interfaces to related products VB1841.0

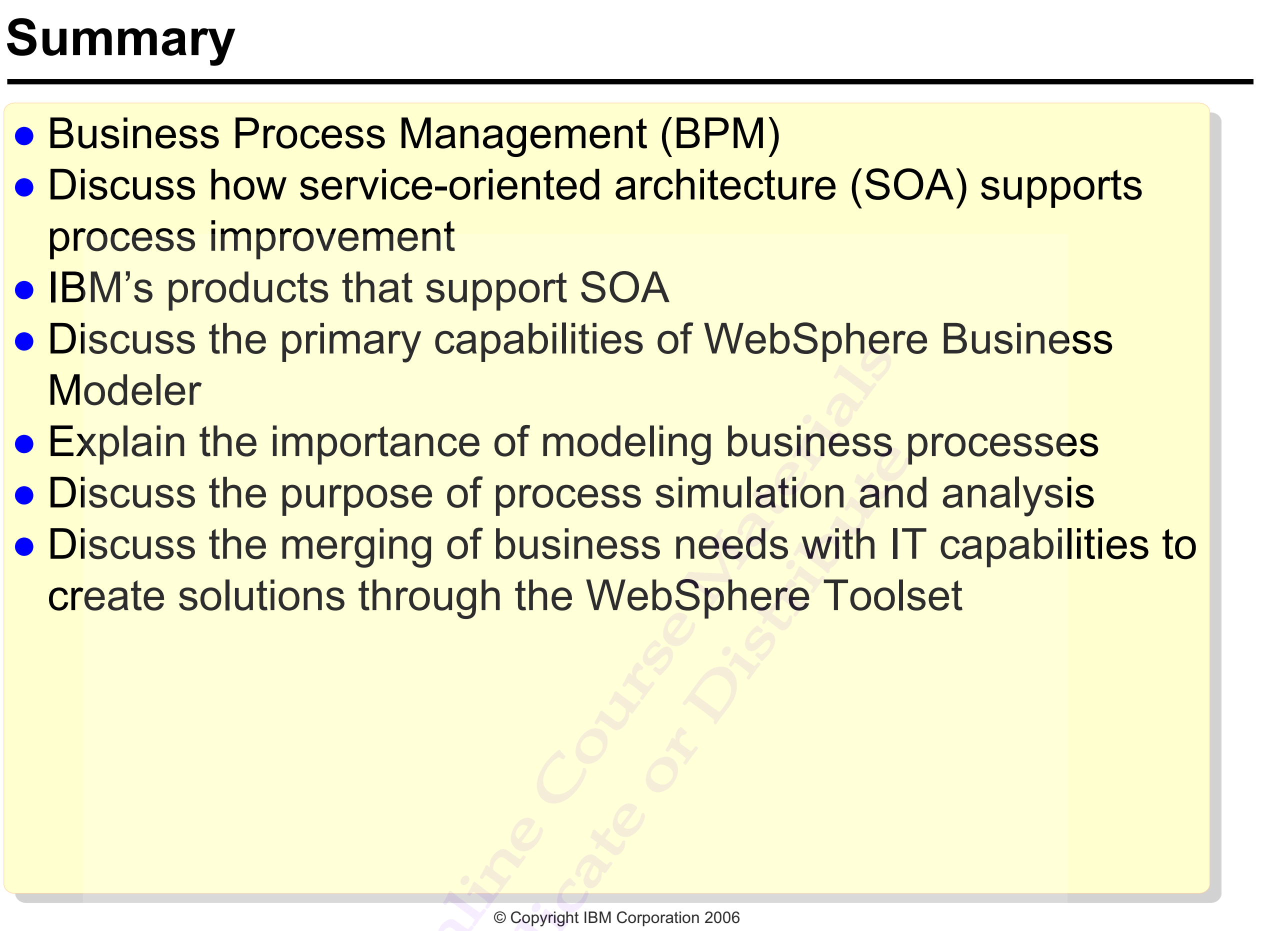
Notes:

WebSphere Business Modeler is just one of the tools in the toolset — when combined with the other tools it supports the entire business-driven development (BDD) life cycle. The real focus of the class is on the Business Modeler, but you will see interfaces to the supporting and development products in the latter half of the course.

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)



Summary

- Business Process Management (BPM)
- Discuss how service-oriented architecture (SOA) supports process improvement
- IBM's products that support SOA
- Discuss the primary capabilities of WebSphere Business Modeler
- Explain the importance of modeling business processes
- Discuss the purpose of process simulation and analysis
- Discuss the merging of business needs with IT capabilities to create solutions through the WebSphere Toolset

Figure 2-30. Summary VB1841.0

Notes:

Unit 3. WebSphere Business Modeler overview

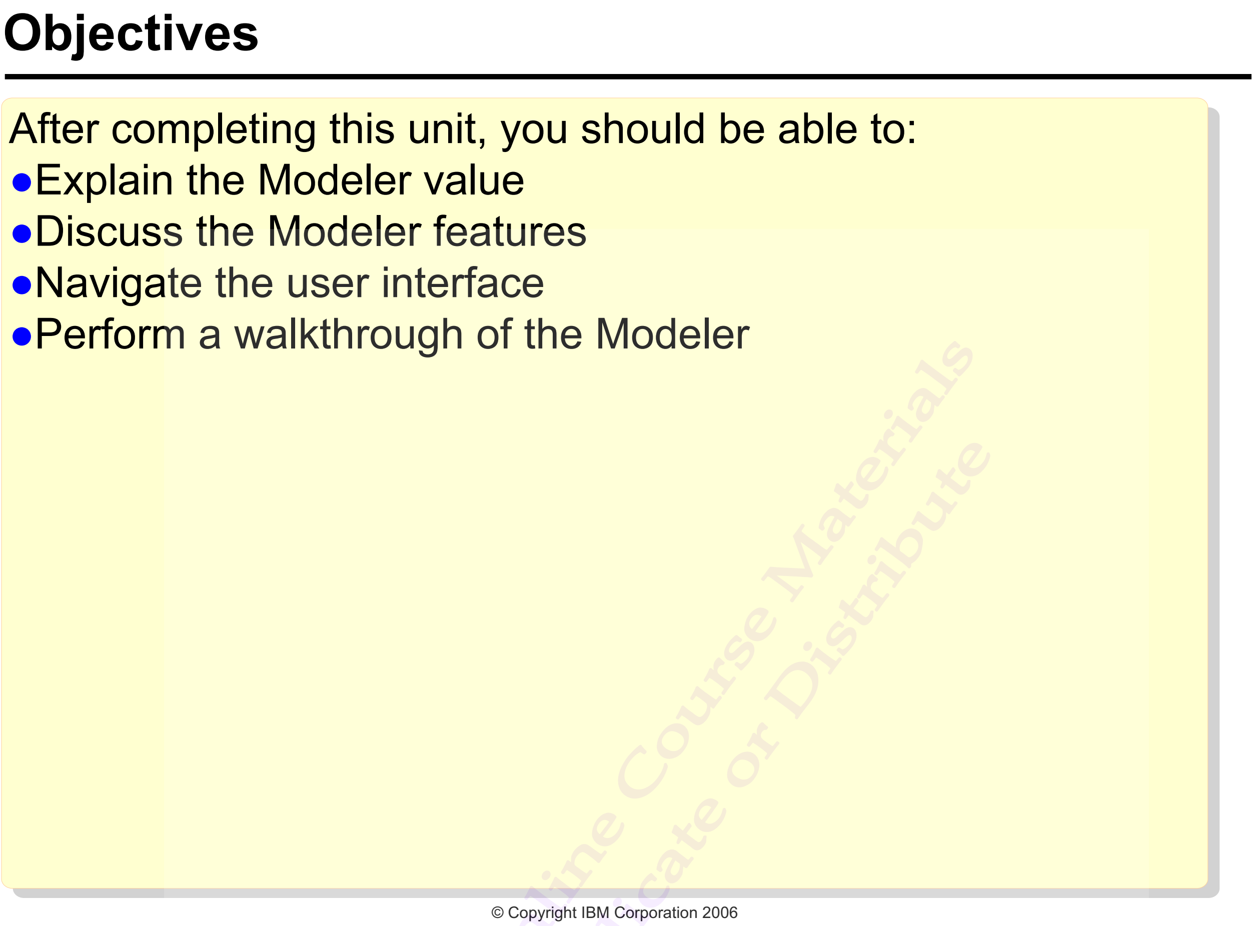
What this unit is about

This unit describes the WebSphere Business Modeler Overview.

What you should be able to do

After completing this unit, you should be able to:

- Describe the modeler value
- Discuss the modeler features
- Navigate the user interface
- Perform a walkthrough of the Modeler



Objectives

After completing this unit, you should be able to:

- Explain the Modeler value
- Discuss the Modeler features
- Navigate the user interface
- Perform a walkthrough of the Modeler

Figure 3-1. Objectives VB1841.0

Notes:

Introducing WebSphere Business Modeler

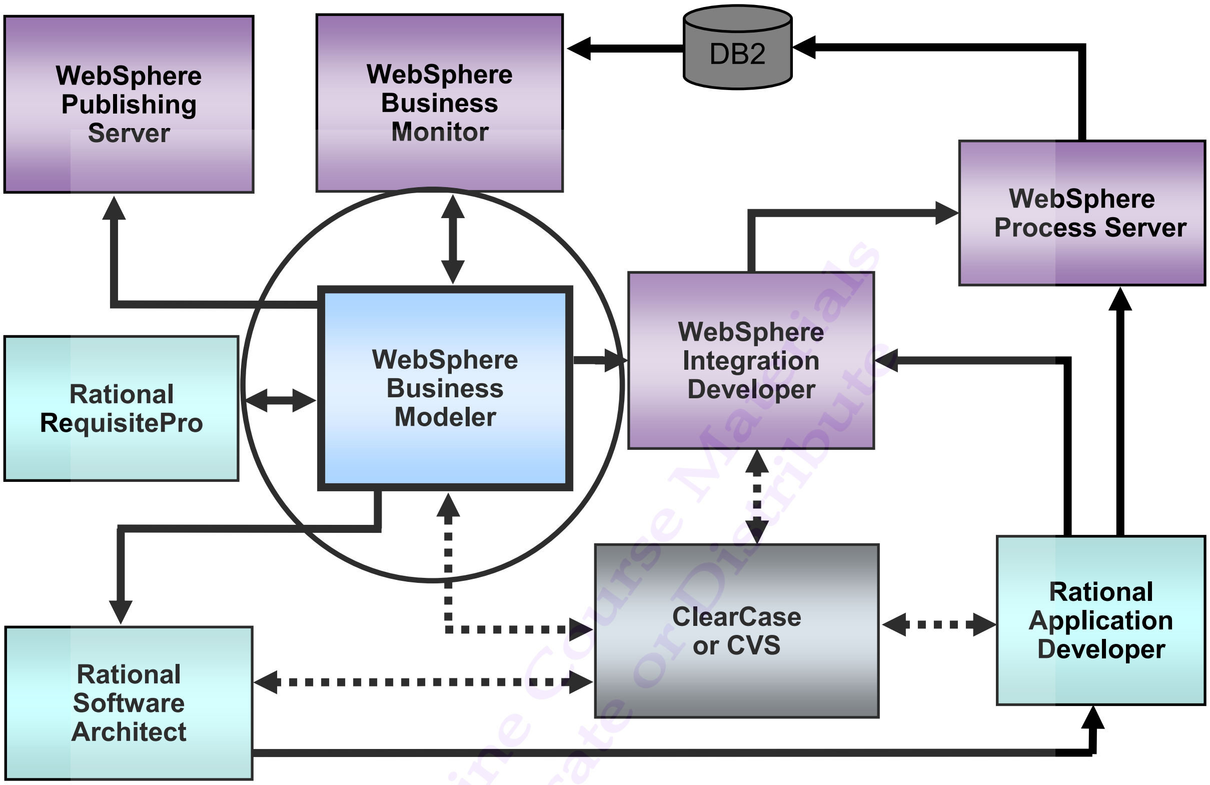

WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
Rational RequisitePro
WebSphere Business Modeler
WebSphere Integration Developer
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 3-2. Introducing WebSphere Business Modeler VB1841.0

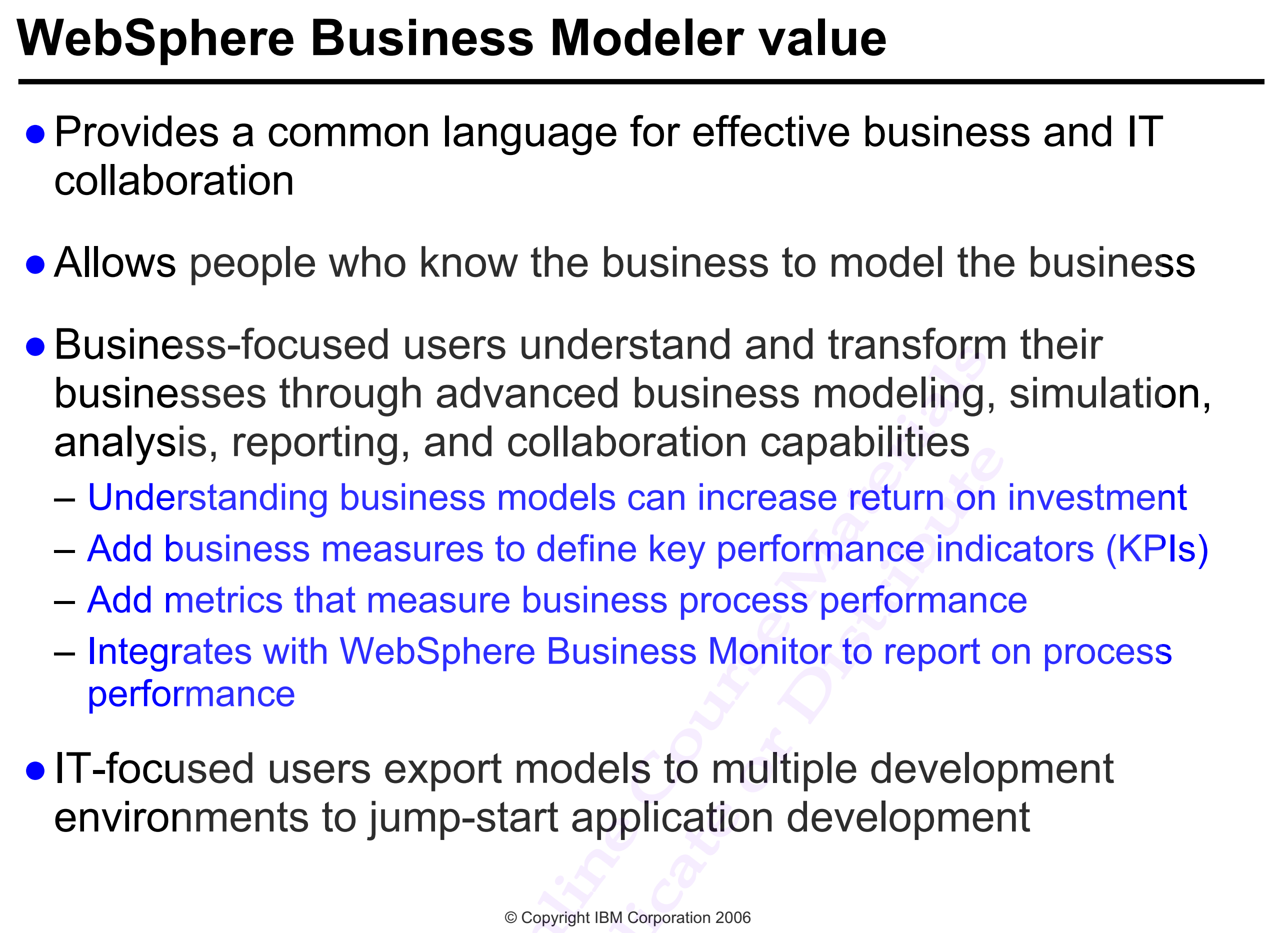
Notes:

WebSphere Business Modeler is just one of the tools in the toolset — when combined with the other tools it supports the entire BDD life cycle. The real focus of the class is on the Business Modeler, but you will see interfaces to the supporting and development products in the last half of the course.

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)



WebSphere Business Modeler value

- Provides a common language for effective business and IT collaboration
- Allows people who know the business to model the business
- Business-focused users understand and transform their businesses through advanced business modeling, simulation, analysis, reporting, and collaboration capabilities
  - Understanding business models can increase return on investment
  - Add business measures to define key performance indicators (KPIs)
  - Add metrics that measure business process performance
  - Integrates with WebSphere Business Monitor to report on process performance
- IT-focused users export models to multiple development environments to jump-start application development

Figure 3-3. WebSphere Business Modeler value VB1841.0

Notes:

- Understand and transform your business through superior business modeling, simulation, analysis, and collaboration capabilities.
- Define situations and situational outcomes in order to have key performance indicators and metrics drive appropriate and timely actions.
- Evaluate process changes prior to implementation, providing valuable cost and resource estimates.
- View animated step-by-step simulation flows of real-time data, with simulation snapshots available for reference.
- Identify and eliminate process inefficiencies, such as bottlenecks and workload imbalances, for more effective resource utilization.
- Generate reports from your models or simulation results using a wide variety of predefined report templates, or create your own custom reports.
- Anticipate market changes and make process improvements to have your business stay flexible and adaptable.

- Improve process design through fact-based simulation.
- Manage risk knowledgeably and effectively.
- Provide return on investment data to financial executives.
- Address new markets or competitive threats through process optimization.
- Set measurable goals with key performance indicators and metrics.
- Define and refine process models through your company's best practices.
- Document your business processes for regulatory compliance.
- Ensure rapid and accurate deployment of your solutions with a clean, smooth hand-off to IT.

Modeler supports a heuristic approach

- Heuristic approach
  - Used for problems that lack an optimal solution such as a process design
- Heuristic problem solving
  - Involves creating a set of rules or a procedure to solve problems
  - Uses experimental and trial-and-error methods
  - Based on requirements and constraints
- Potential process requirements and constraints
  - Time to complete
  - Cost to complete
  - Number of resources available
  - Schedule of resources
  - Number of paths or cases to follow
  - Frequency of process instances and starts

Figure 3-4. Modeler supports a heuristic approach VB1841.0

Notes:

Modeler documentation features

- Captures and models sequences of activities, complex logic, and business rules
- Specific modeling constructs to represent different types of work and flow logic
- Ability to represent the process in two different layouts, freeform and swimlane, and switch back and forth between them as needed
- Elements to represent different types of resources that perform the work
- Structures to represent the organization of the resource elements
- Storage of several different types of process-related information based on the level of analysis to be performed
- Provisions to link to or attach additional process documentation
- A set of catalogs to organize all model information

Figure 3-5. Modeler documentation features VB1841.0

Notes:

Modeler analysis features

- Static analysis
  - Activities by organization, location, classification
  - Role and resource cost and availability
  - Matrix analysis shows the associations between model elements
- Simulation permits analysis of workloads and bottlenecks
  - Cycle time
  - Costs
  - Resource utilization
- Dynamic analysis
  - Validate current conditions
  - Evaluate the benefits of different alternatives
  - Build a business case for the future
- Visual analysis
  - Color code the elements by role, classification, or organization units
  - Display name of object labels on top or bottom

Figure 3-6. Modeler analysis features VB1841.0

Notes:

Modeler simulation features

- Simulation engine that is driven by the arrival of business items (tokens) which can be statically distributed over a time period
- Average or statistically varying times can be applied to the work activities to analyze the cycle time
- Resources are assigned to the activities to determine the process costs
- The flows can be animated during simulation, allowing the visualization of the real-time flow of the process
- Simulation results are available for analysis and reference
- The simulation engine enables determination of the most efficient model prior to implementation by quickly conducting the "what-if" analysis

Figure 3-7. Modeler simulation features VB1841.0

Notes:

Simulations are the pay-off for all the work you put into the model — just the same as doing a three-dimensional model of a house or an airplane, this is where you “walk around” for different perspectives, change the parameters to see the impact of “what-if” scenarios, get the ***dynamic*** aspect that goes beyond simple mapping.

Modeler usability features

- Multiple ways to draw models
  - Drag and drop, context menus, copy and paste
- Align selected nodes in the process diagram
  - Align top, middle, bottom, left, center, or right
- Auto layout of flow diagram left to right
- Several navigation techniques
  - Mouse, keyboard, outlines, mini-views
- Drawing space management
  - Add, remove, and insert space both horizontally and vertically
- Multiple active windows
- Multiple views, with multiple tabs all adjustable
- Real-time model validation
  - Errors are identified and reported as they are created

Figure 3-8. Modeler usability features VB1841.0

Notes:

Modeler user features

- Six modes designed to support specific user efforts
  - Three for model development and analysis
  - Three for technology implementation
- Multi-user support (team support)
  - Use a repository to share Modeler files
  - Features such as share, update (checkout), commit (checkin), synchronize, get contents, compare versions, audit trail
  - View history of all changes to the models
  - CVS and ClearCase repository providers are supported
- Publishing support
  - Draft and released versions
  - Access control
  - Collaboration with those that do not have modeler
- Create business measures for monitor

Figure 3-9. Modeler user features VB1841.0

Notes:

Modeler eases both use and presentation by allowing the user to change modes to present varying levels and types of detail without losing any of the information captured. It also facilitates sharing the resulting model among the modeling team with support for version control.

Import formats

- Imports information from a variety of sources to facilitate building business process models quickly
- The wizard supports the following types of imports:
  - WebSphere Business Modeler project (.zip or .mar)
  - WebSphere MQ Workflow
  - WebSphere Business Integration Workbench V4.2.4
  - Delimited text
  - Microsoft Visio
  - WebSphere Business Modeler XML
  - Monitoring result
  - Business services and service objects
- Imports process checks for duplicate names and renames them a "_number"

Figure 3-10. Import formats VB1841.0

Notes:

Import formats

WebSphere Business Modeler allows you to import information from a variety of sources to facilitate building business process models quickly.

The information used by WebSphere Business Modeler may already exist in another application, tool, file format, or another copy of WebSphere Business Modeler. WebSphere Business Modeler provides a wizard to help you import this information into a new project or into an existing project. The wizard supports the following types of imports:

WebSphere Business Modeler project imports a complete project or specific model elements exported from another copy of WebSphere Business Modeler. This provides a way to share modeling information with other people. The file type used in this import is a ZIP file for projects exported using version 6.0.1 or earlier of WebSphere Business Modeler or a MAR file for projects exported using version 6.0.2 of WebSphere Business Modeler. The ZIP or MAR file contains a set of WebSphere Business Modeler project files. Note that with this type of import, if the import process detects that an element with the same name already exists in the target project and you have not chosen to overwrite, the import process does not import the element.

WebSphere MQ Workflow imports a model developed in IBM WebSphere MQ Workflow Buildtime 3.5 and exported in FlowMark Definition Language (FDL) file. The process maps each MQ Workflow element to a WebSphere Business Modeler element that provides the same or similar functionality. If the import process detects that an element with the same name already exists in the target project, the import process renames the imported element. A view that lists the renaming that occurred is available after the import finishes.

WebSphere Business Integration Workbench V4.2.4 imports an organization from version 4.2.4 of WebSphere Business Integration Workbench. This provides a way to migrate from this product to WebSphere Business Modeler. See Migrating from 4.2.4 for information on the migration process. **Note:** If you are importing an ORG file from version 4.2.4, you can only import into a new project.

Delimited text imports delimited text files. Delimited text is a simple file format that consists of text separated into meaningful chunks by specific characters. The chunks of text are usually individual fields. The specific character is called a delimiter, and can be any character that is not found in the text, such as comma or tab. The wizard can only create certain elements and certain attributes by importing from delimited text files. See the reference file for details. If the import process detects that an element with the same name already exists in the target project, the import process renames the imported element. A view that lists the renaming that occurred is available after the import finishes.

WebSphere Business Modeler provides a Microsoft Excel spreadsheet and several text files as examples of how you would prepare a delimited text file so that the import process can import it. In the file, the first row contains the predefined field names for a particular type of import and they should not be changed.

Microsoft Visio imports diagram VDX files and converts the shapes and connectors to equivalent model elements. See the reference file for the mapping used by the wizard. If the import process detects that an element with the same name already exists in the target project, the import process renames the imported element. A view that lists the renaming that occurred is available after the import finishes.

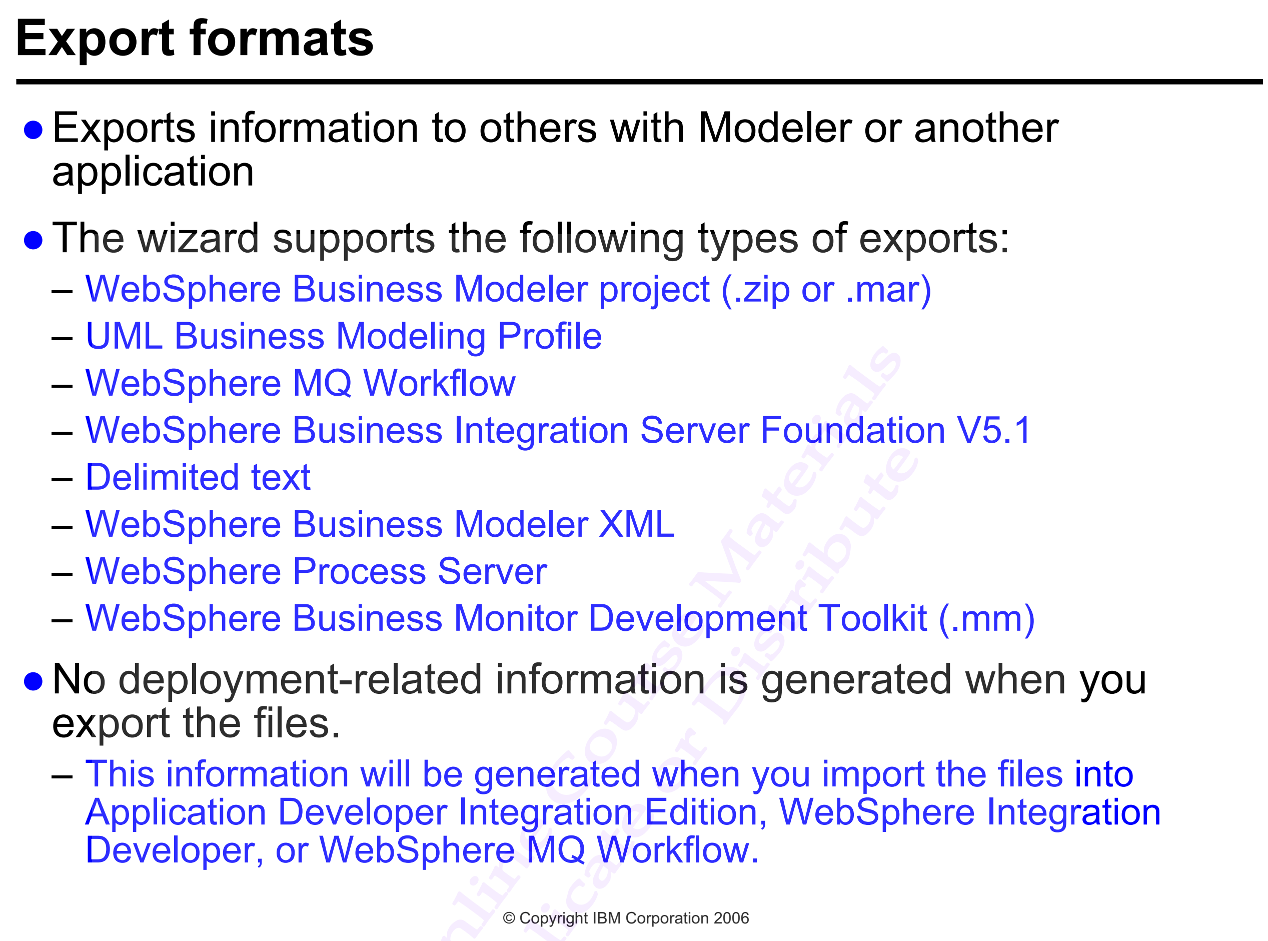
WebSphere Business Modeler XML imports the project or model elements defined according to the WebSphere Business Modeler schema. This schema provides other modeling tools with an interchange format that they can use to share information with WebSphere Business Modeler. The schema is in the \samples\import\xml folder. If the import process detects that an element with the same name already exists in the target project, the import process renames the imported element. A view that lists the renaming that occurred is available after the import finishes.

Monitoring result imports XML files that have been exported from WebSphere Business Monitor.

Business services and service objects imports data definitions contained in XML Schema Definition (XSD) files into a business service object catalog and service definitions contained in Web Services Definition Language (WSDL) files into a business service catalog. If the import process detects that an element with the same name already exists in the target project, the import process allows you to either overwrite the existing element or skip importing the element.

Once you complete the import wizard, it starts the import process. The import process checks whether an imported element has the same name as an existing element. If there is a duplicate name, the import process renames the imported element by appending _1 to its name. If there is already an element with _1 in its name, the process tries _2 and so on until it finds a name that it can use. For example, if the project has a process called Order and you import a process called Order into the project, after the import finishes, the project has a process called Order and a process called Order_1. Order is the original process and Order_1 is the imported process. However, when you are doing a WebSphere Business Modeler Project import, you can overwrite the existing elements. If you choose not to overwrite, the import process does not import the elements with duplicate names. **Note:** If the name of an element exceeds 50 characters, the import process truncates the name. To prevent conflicts, the process appends an underscore and a number that increments. The import process lists the names of the files that it truncated in a view after it completes the import.

The import process also validates the content. If it finds a problem such as an illegal character, the process fixes the problem so it can continue the import. When the process completes the import, the problems it encountered and fixed are available for you to view. After the import has finished, WebSphere Business Modeler validates the new content.



Export formats

- Exports information to others with Modeler or another application
- The wizard supports the following types of exports:
  - WebSphere Business Modeler project (.zip or .mar)
  - UML Business Modeling Profile
  - WebSphere MQ Workflow
  - WebSphere Business Integration Server Foundation V5.1
  - Delimited text
  - WebSphere Business Modeler XML
  - WebSphere Process Server
  - WebSphere Business Monitor Development Toolkit (.mm)
- No deployment-related information is generated when you export the files.
  - This information will be generated when you import the files into Application Developer Integration Edition, WebSphere Integration Developer, or WebSphere MQ Workflow.

Figure 3-11. Export formats VB1841.0

Notes:

Export formats

After modeling business processes, WebSphere Business Modeler allows you to export information to another application to, for example, implement the business processes. You can also export a project so that another person can import it to view or work on it.

WebSphere Business Modeler provides a wizard to help you export this information into a format that the other application can read. The wizard supports the following types of exports:

WebSphere Business Modeler project exports the selected project or elements into a MAR file. This file can then be imported by another copy of WebSphere Business Modeler. This provides a way of sharing business process models. This is the recommended format to use when sharing models because it exports all of the information captured by WebSphere Business Modeler about a project or element. For example, this export includes position information for diagrams while other exports, such as WebSphere Business Modeler XML, do not. For this reason, this type of export is the recommended format to use for sharing projects between members of a modeling team.

UML Business Modeling Profile exports the selected project or elements into a Unified Modeling Language (UML) 1.4 XMI 1.1 file. Each data definition is mapped to a UML class, and each process is mapped to a UML use case and associated with a UML activity graph to represent the process flow. The resulting file of the export can be imported into IBM Rational XDE (eXtended Development Environment) 2003.06.00 or 2003.06.12 edition.

WebSphere MQ Workflow exports the selected project or element into an FDL file. This file can then be imported into IBM WebSphere MQ Workflow Buildtime. Note that if you import an FDL file into WebSphere Business Modeler and then export it out again as an FDL file, the export file may not be the same as the import file due to transformations that occurred while importing the information into WebSphere Business Modeler.

WebSphere Business Integration Server Foundation V5.1 exports the selected project or elements into Business Process Execution Language (BPEL), WSDL, and XSD files. These files can then be imported into IBM WebSphere Studio Application Developer, Integration Edition for Linux and Windows.

Delimited text exports the selected project or element into a text file. The fields that describe elements are separated by delimiters (special characters). The delimited text file can be imported into any application, such as Microsoft Excel, that imports delimited text.

WebSphere Business Modeler XML exports the selected project or element into an XML file. The file conforms to the WebSphere Business Modeler schema. The schema provides an external interchange format that other modeling tools can use to obtain information from WebSphere Business Modeler. The schema is in the \samples\import\xml folder.

WebSphere Process Server for exporting SCA (Service Component Architecture) artifacts and BPEL, WSDL, and XSD files that can be imported into WebSphere Integration Developer.

WebSphere Business Monitor Development Toolkit (.mm) exports to an MM (monitor model) file and to two or more SVG files. The monitor model can be refined in the WebSphere Business Monitor Development Toolkit and then deployed to WebSphere Business Monitor.

Important: Models created in WebSphere Business Modeler are not guaranteed to work correctly in the other tools. When you are converting files, you should be aware of the following:

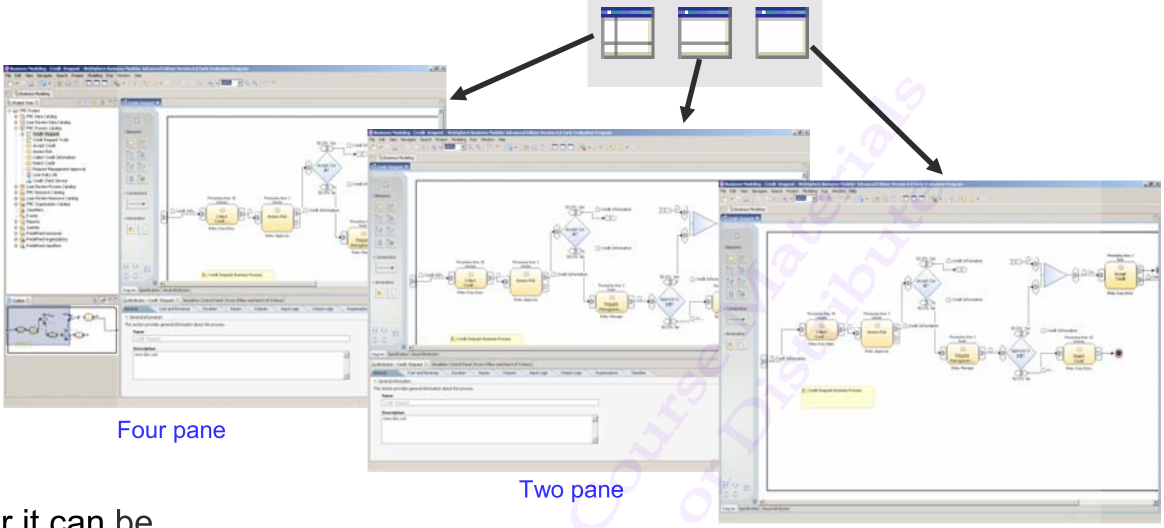
If you plan to export FDL, BPEL, or SCA artifacts, you should first ensure you are working in the appropriate mode (WebSphere MQ Workflow, WebSphere Business Integration Server Foundation, or WebSphere Process Server respectively) and that your model has no errors. These modes enforce restrictions on the models in WebSphere Business Modeler to ensure that the model can be imported into the other applications and function properly.

Based on what is specified in the model, it may not be possible to generate a complete process definition. For example, if the decision branches in the model have no formal expressions associated with them, no BPEL or FDL transition conditions will be generated.

No deployment-related information is generated when you export the files. This information will be generated when you import the files into Application Developer Integration Edition, WebSphere Integration Developer, or WebSphere MQ Workflow.

User interface: Eclipse

- The user interface is built on Eclipse, which is an open source framework that controls multiple panes in one window.
- The interface can be changed quickly by clicking a button for standard settings.
  - Four pane, two pane, or single pane:



- Or it can be customized by clicking and dragging any of the panes or changing the shape by dragging the edges.

Figure 3-12. User interface: Eclipse VB1841.0

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Notes:

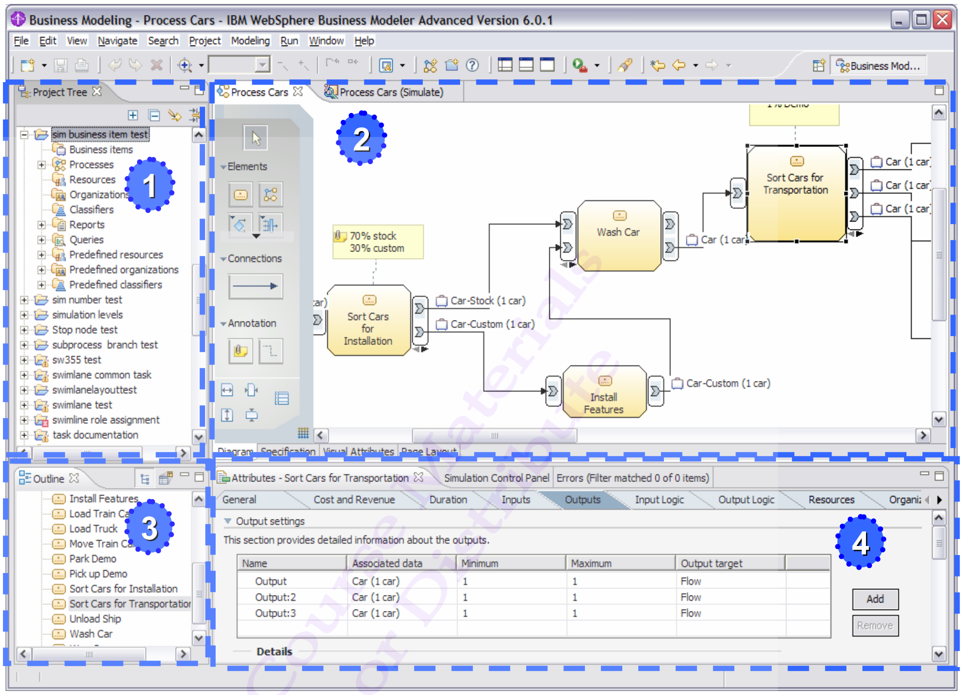
Eclipse is an open source platform-independent software framework for delivering what the project calls "rich client" applications, as opposed to "thin client" browser-based applications. So far this framework has typically been used to develop integrated development environments (IDEs), such as the Java IDE called *Java Development Toolkit* (JDT) and the Eclipse Java Compiler (ECJ) that comes as part of Eclipse (and which is also used to develop Eclipse itself). However, it can be used for other types of client applications as well, such as the BitTorrent client Azureus.

The four-pane view is the default Modeler desktop

1 Project Tree view
- Shows all the elements available to be used in the model, plus:
  - Resources
  - Organizations

2 Process Editor view
- The area where models are created
- Other editors open in the same pane

3 Outline view
- Index to elements on the process model



Output settings

This section provides detailed information about the outputs.

Name	Associated data	Minimum	Maximum	Output target
Output	Car (1 car)	1	1	Flow
Output:2	Car (1 car)	1	1	Flow
Output:3	Car (1 car)	1	1	Flow

4 Attribute view
- All of the details associated with the element selected on the diagram
- This pane is also used to display analysis results

Figure 3-13. The four-pane view is the default Modeler desktop VB1841.0

Notes:

Basic menu bar navigation

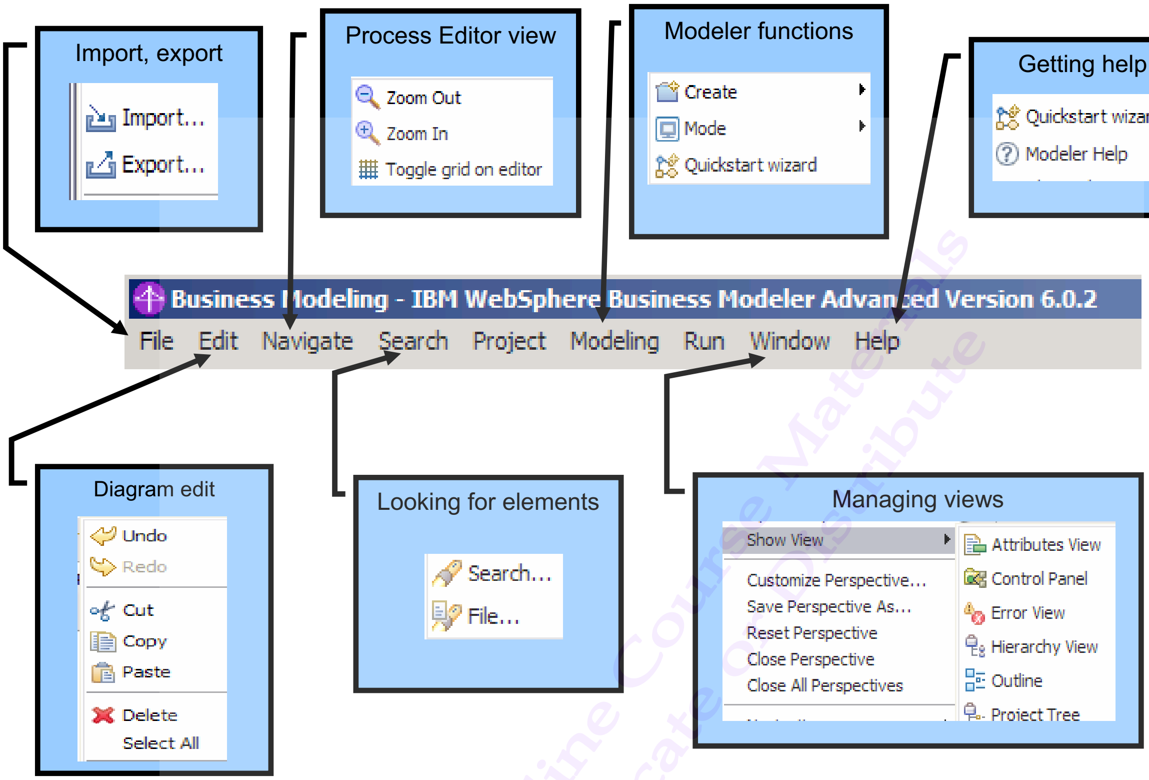


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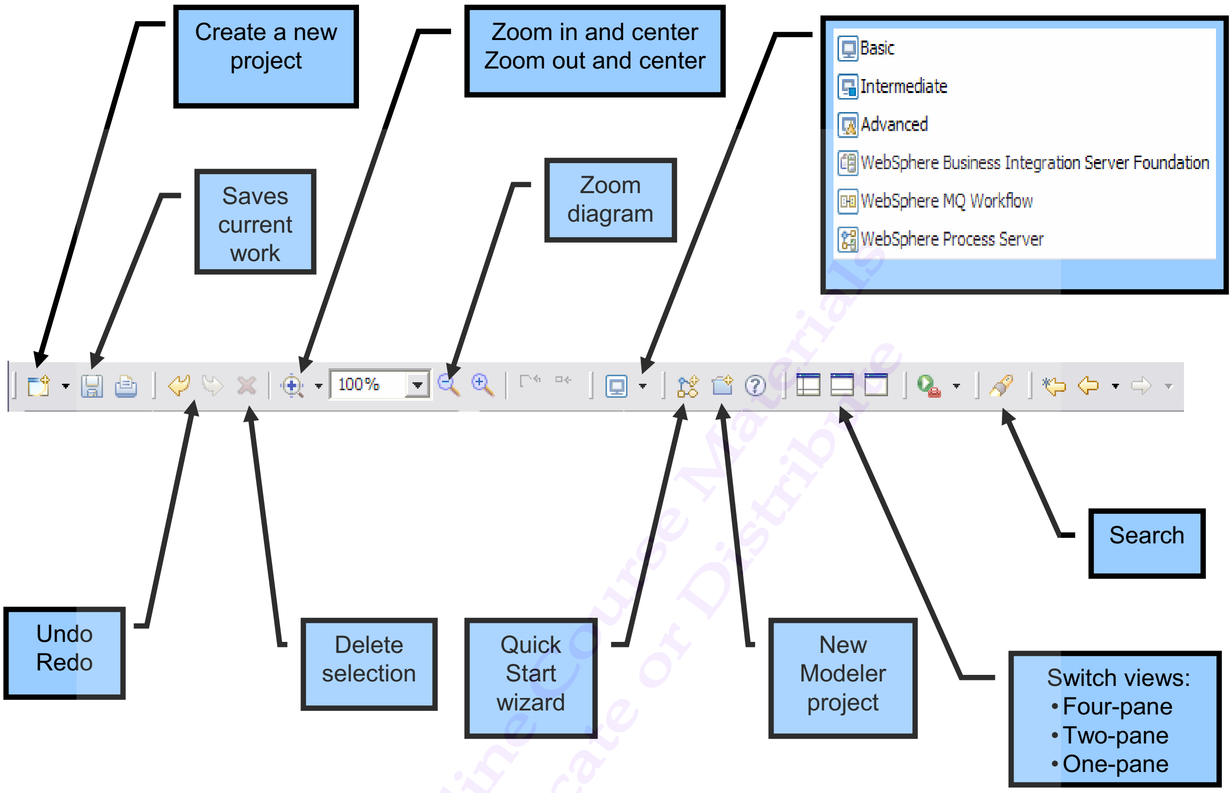
Figure 3-14. Basic menu bar navigation VB1841.0

Notes:

Basic tool bar navigation



Create a new project

Zoom in and center
Zoom out and center

Saves current work

Zoom diagram

Search

Undo
Redo

Delete selection

Quick Start wizard

New Modeler project

Switch views:
- Four-pane
- Two-pane
- One-pane

Figure 3-15. Basic tool bar navigation VB1841.0

Notes:

Project Tree view

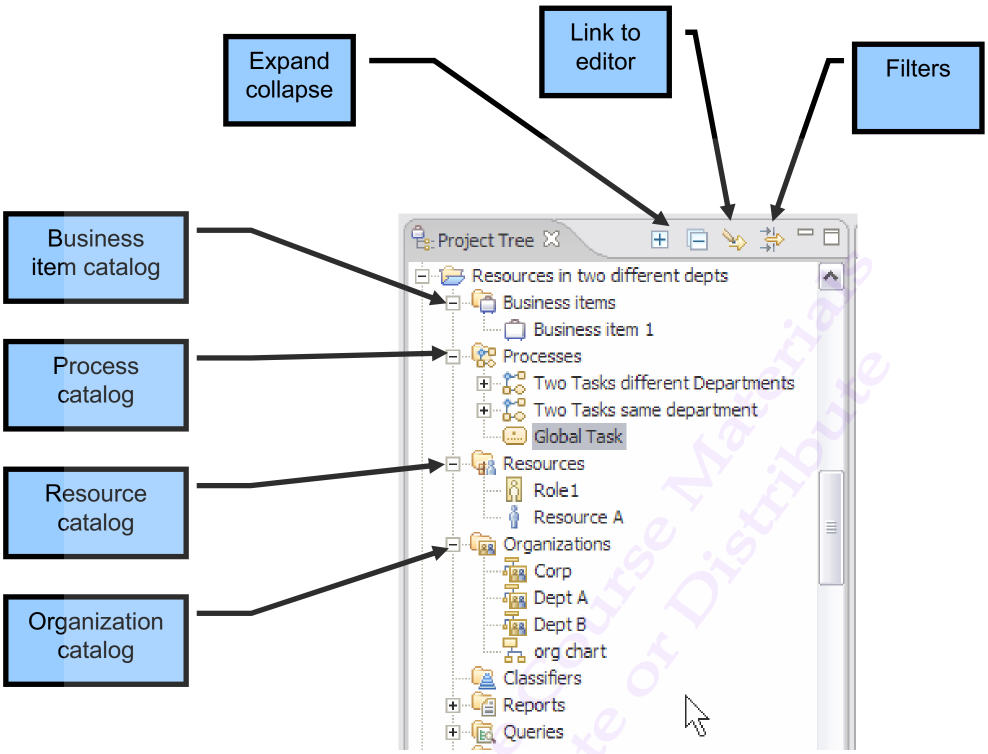
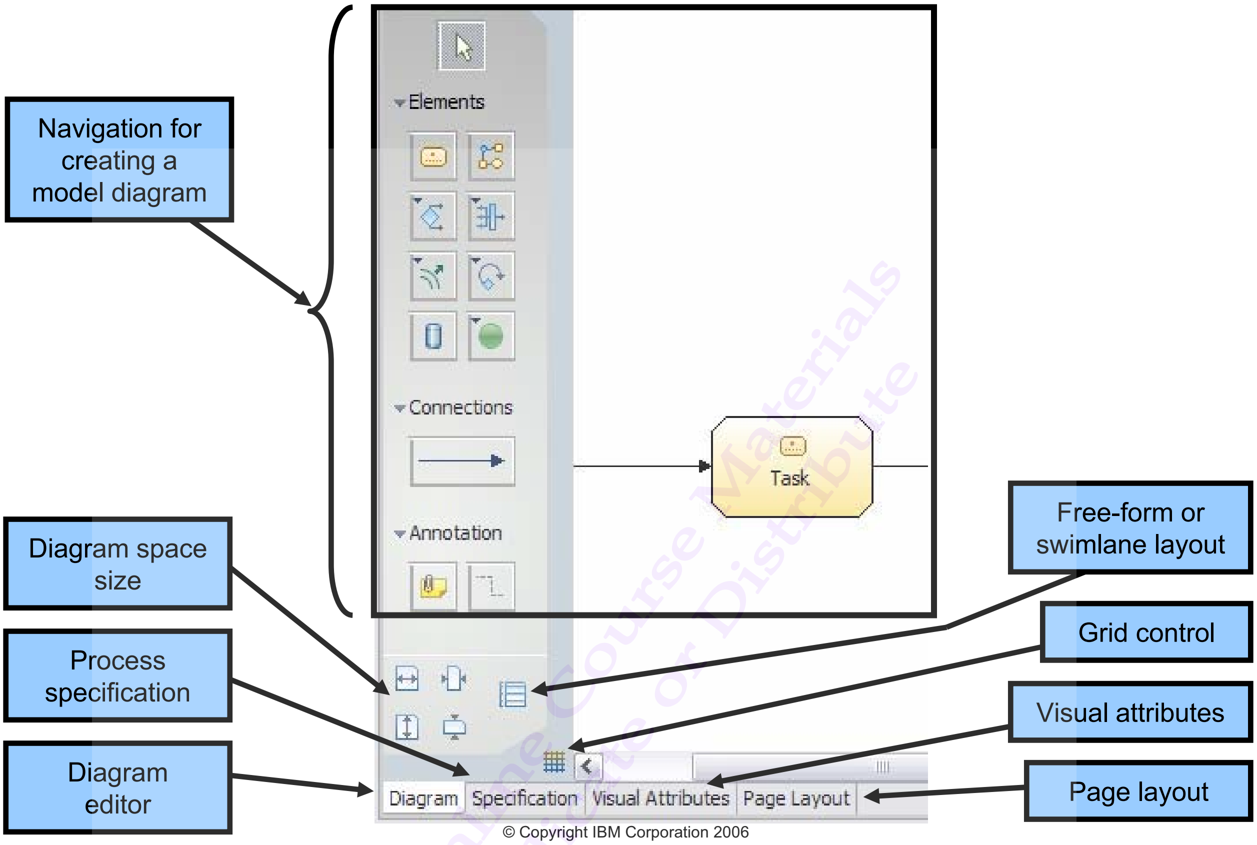


Figure 3-16. Project Tree view VB1841.0

Notes:

Process editor navigation



Navigation for creating a model diagram

Diagram space size

Process specification

Diagram editor

Free-form or swimlane layout

Grid control

Visual attributes

Page layout

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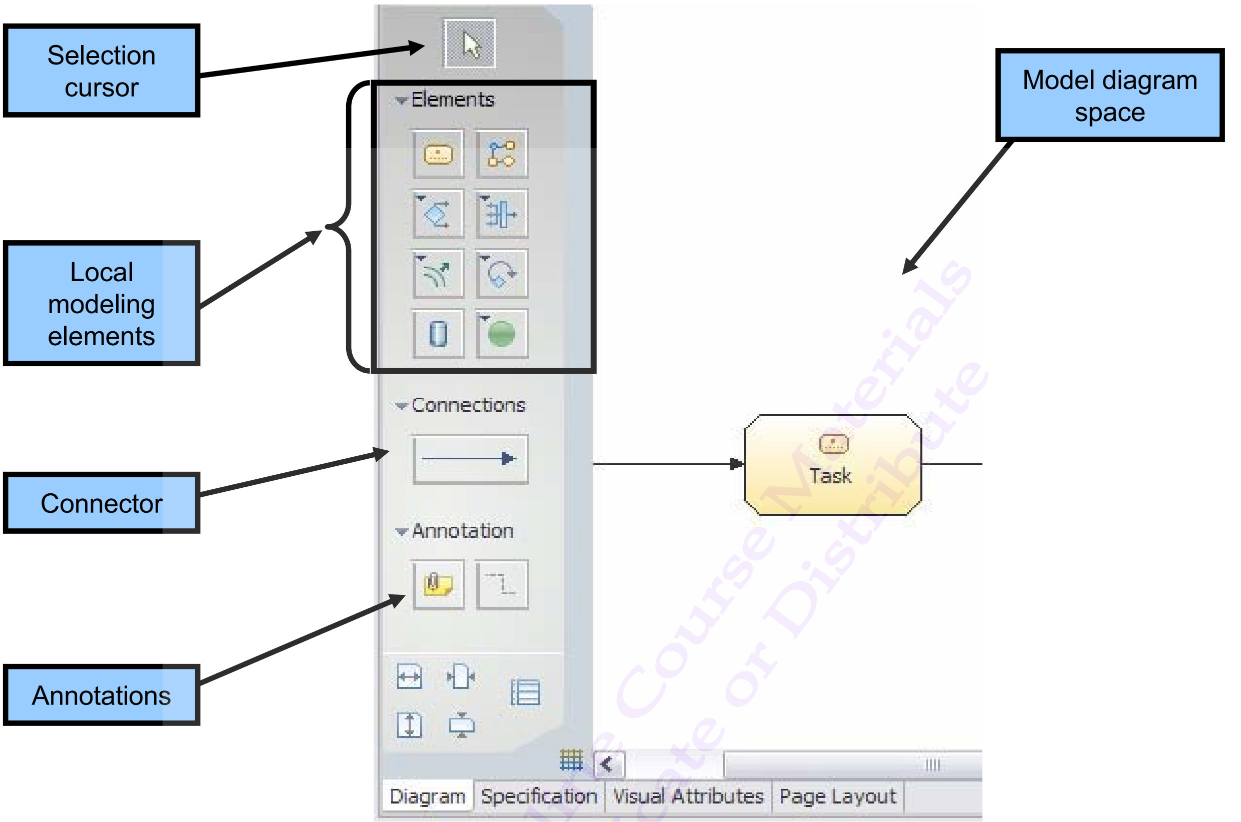
Figure 3-17. Process editor navigation VB1841.0

Notes:

Model diagram creation navigation



Selection cursor

Local modeling elements

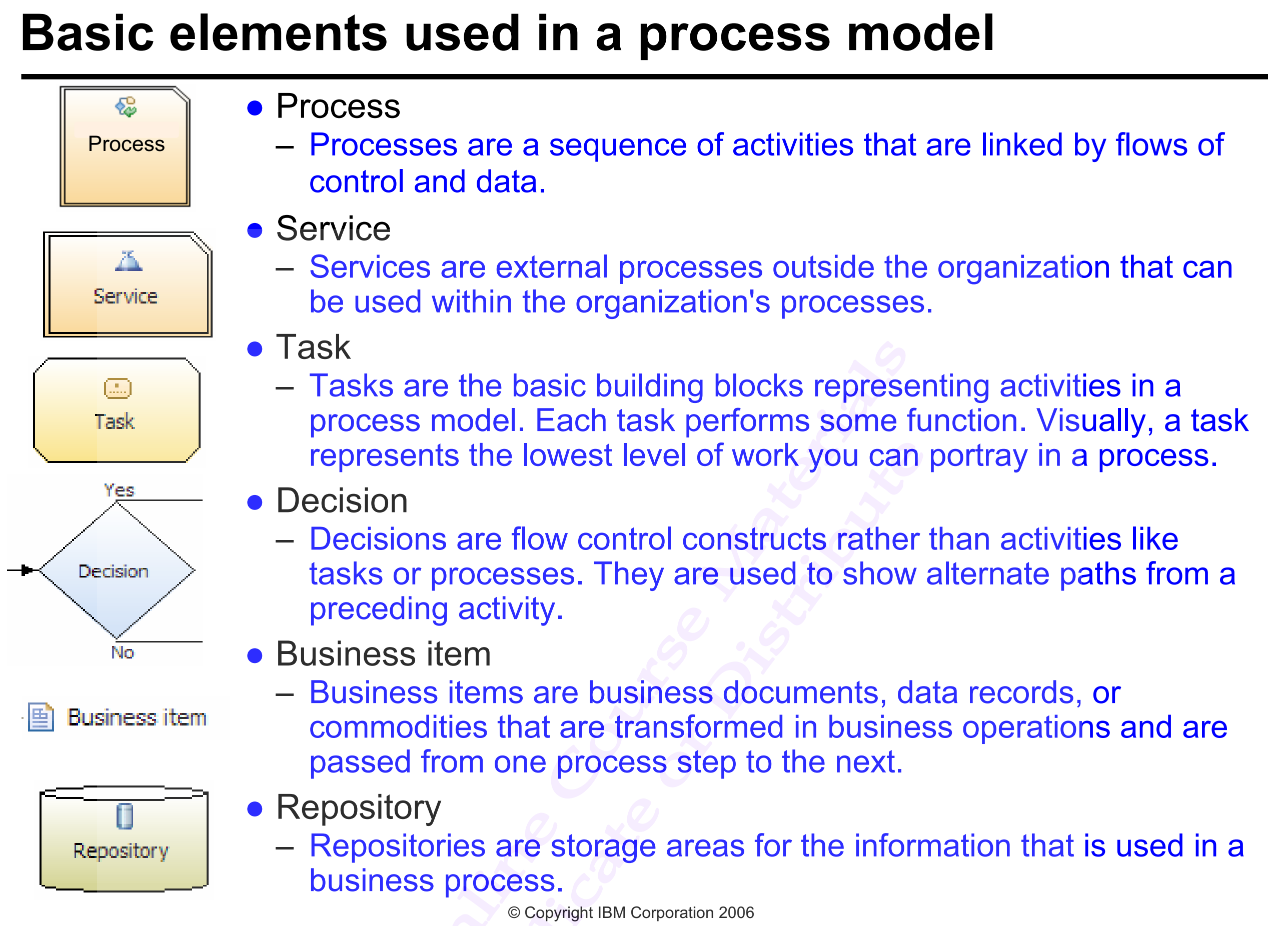
Connector

Annotations

Model diagram space

Figure 3-18. Model diagram creation navigation VB1841.0

Notes:


Process
Service
Task
Yes
Decision
No
Business item
Repository

Basic elements used in a process model

- Process
  - Processes are a sequence of activities that are linked by flows of control and data.
- Service
  - Services are external processes outside the organization that can be used within the organization's processes.
- Task
  - Tasks are the basic building blocks representing activities in a process model. Each task performs some function. Visually, a task represents the lowest level of work you can portray in a process.
- Decision
  - Decisions are flow control constructs rather than activities like tasks or processes. They are used to show alternate paths from a preceding activity.
- Business item
  - Business items are business documents, data records, or commodities that are transformed in business operations and are passed from one process step to the next.
- Repository
  - Repositories are storage areas for the information that is used in a business process.

Figure 3-19. Basic elements used in a process model VB1841.0

Notes:

Basic Modeler terminology

- Workspace
  - A workspace is a folder in which WebSphere Business Modeler stores model information and user preferences on the hard drive.
  - Only one workspace can be open at one time.
  - Each workspace can contain multiple projects.

- Project
  - A project is the top-level container that holds all of the catalogs, processes, and modeling elements related to a particular work effort.
    - A single project can hold all of the modeling elements for your company or organization.
    - A separate project can be created for different business processes, functions, or work groups.
      - Separate projects cannot share elements without exporting and importing.
  - Creating a project is the first step in modeling a new process.

Figure 3-20. Basic Modeler terminology VB1841.0

Notes:

Walkthroughs

- This course contains walkthroughs.
- A walkthrough is a small lab embedded in a lecture.
- In most cases, completion of the walkthrough exercise is required before you begin the lab exercise — your lab will not work if you skip the walkthrough.
- During the walkthrough:
  - The instructor will explain important parts of the product you are using.
  - You will then follow the steps under the slide in the Notes section of the lecture book to complete the work.
  - Feel free to ask questions about what you are learning or if you cannot complete the steps on the walkthrough page.
  - If you move ahead in the walkthrough, you might miss out on important comments from the instructor.
- The advantage of a walkthrough is that you are able to use the features you are learning immediately.

Figure 3-21. Walkthroughs

Notes:

VMware

- The products covered in this course are installed on VMware.
  - VMware is a virtual machine — a working operating system that interacts with the machine's installed operating system.
    - Similar to running another personal computer on your personal computer
  - VMware is not an IBM product and does not come with the products used in this class. The use of VMware in this course is intended for educational purposes only, and is not recommended in a production environment.
- The operating system used in the VMware image for this class is the Windows XP operating system.
- Do not confuse the VMware operating system with the computer operating system.
  - Use VMware Player in full screen mode to ensure you use the VMware operating system for this class, not your computer's operating system.
- Because of the overhead of running a virtual machine on your system, IBM products installed in VMware run more slowly than when installed on the host computer.

Figure 3-22. VMware VB1841.0

Notes:

Walkthrough — starting the VMware

- Click the VMware Player icon from your desktop.
- Open the WB182_Windows XP Professional.vmx file.
- Click Create when ask to create new identifier.
- Click OK.
- User ID and password are needed:
  - ID = `administrator`
  - Password = `wbi42x@IBM` (case sensitive)
- To run VMware Player in full screen mode:
  - Click the maximize button on the VMware Player window.
  - The desktop expands to fill the full screen, leaving a small toolbar visible at the top of the screen.
- To return to the Host PC:
  - Press Ctrl+Alt key combination to return to the host desktop
- Be sure to quit VMware Player before shutting down the host computer (the computer where VMware Player is running).
  - To quit VMware Player, choose Player → Exit or click the Windows exit button on the VMware Player window or toolbar (the X in the upper right corner).

Figure 3-23. Walkthrough — starting the VMware VB1841.0

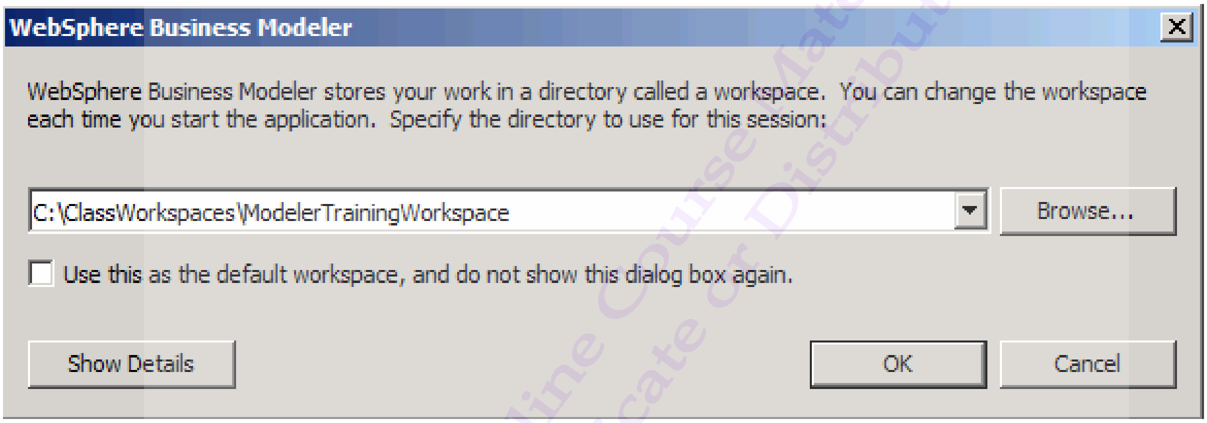
Notes:

To launch the WebSphere Business Modeler, click **Start —> Programs —> WebSphere Business Modeler —> WebSphere Business Modeler**.

You can also create a shortcut to modeler and place it on the desktop

Walkthrough — starting the Modeler

- Launch WebSphere Business Modeler:
  - Click the Modeler icon on your VMware desktop.
- Selecting a workspace location is important:
  - Many workspaces can exist on a workstation.
  - The default location is in the “My Documents” folder.
    - This is changed for the class.
    - There are path length considerations.



WebSphere Business Modeler stores your work in a directory called a workspace. You can change the workspace each time you start the application. Specify the directory to use for this session:

C:\ClassWorkspaces\ModelerTrainingWorkspace

☐ Use this as the default workspace, and do not show this dialog box again.

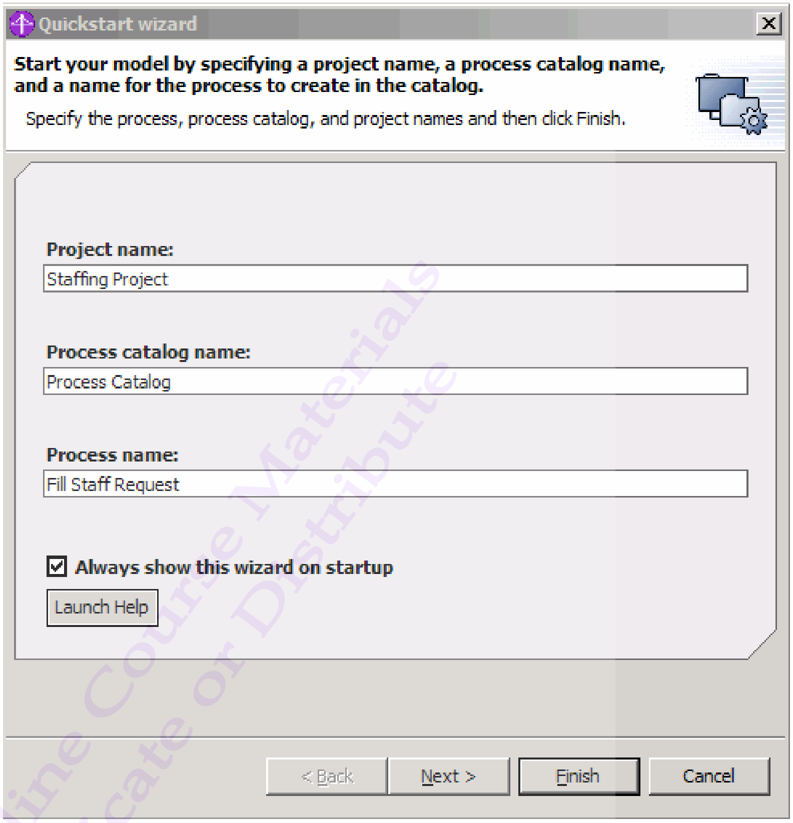
Figure 3-24. Walkthrough — starting the Modeler VB1841.0

Notes:

For class, use a folder called `ModelerTrainingWorkspace` on the `C:` drive (`C:\ClassWorkspaces\SampleWorkspace`).

Walkthrough — Quickstart wizard (1 of 2)

- Launch the WebSphere Business Modeler.
- Open the project wizard.
- By default, the **Quickstart wizard** will appear when the tool starts.
- The **Quickstart wizard** creates a project in the associated workspace:
  - Name the project
  - Name the process catalog
  - Name the process
- Press **Next** to name the first business item.



Quickstart wizard

Start your model by specifying a project name, a process catalog name, and a name for the process to create in the catalog.

Specify the process, process catalog, and project names and then click Finish.

Project name: Staffing Project

Process catalog name: Process Catalog

Process name: Fill Staff Request

☑ **Always show this wizard on startup**

Figure 3-25. Walkthrough — Quickstart wizard (1 of 2) VB1841.0

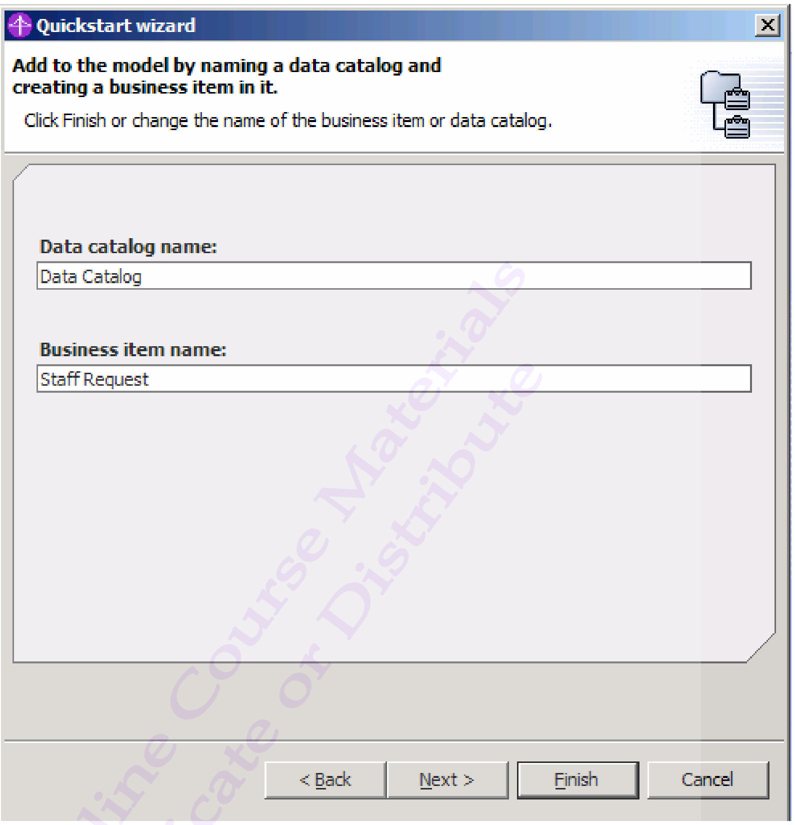
Notes:

In the Quickstart Wizard window, enter the following:

1. **Project name**: `Staffing Project`
2. **Process catalog name**: `Process Catalog`
3. **Process name**: `Fill Staff Request`
4. **Press Next**.

Walkthrough — Quickstart wizard (2 of 2)

- Change the default data catalog and first business item.
  - Name the data catalog
  - Name the business item
- Press **Finish** to create a free-form diagram.



Add to the model by naming a data catalog and creating a business item in it.

Click Finish or change the name of the business item or data catalog.

Data catalog name: Data Catalog

Business item name: Staff Request

Figure 3-26. Walkthrough — Quickstart wizard (2 of 2) VB1841.0

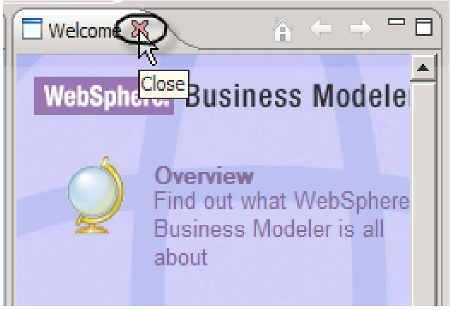
Notes:

In the Quickstart Wizard window, enter the following:

1. **Data catalog name:** `Data Catalog`
2. **Business item name:** `Staff Request`
3. **Press Finish.**

Walkthrough — Welcome page

- Close the Welcome page.



Find out what WebSphere Business Modeler is all about

- Click the Apply 4-pane layout button.

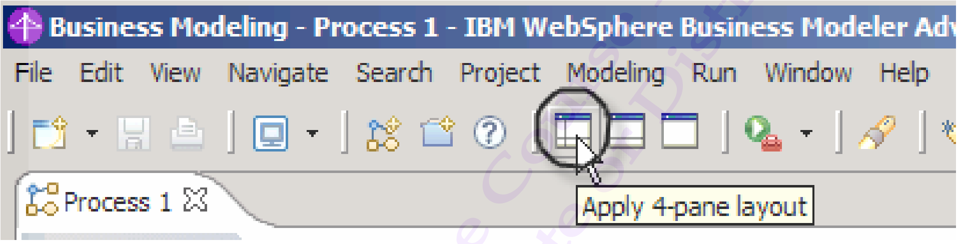


Figure 3-27. Walkthrough — Welcome page VB1841.0

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Notes:

1. Close the Welcome page.
2. Click the Apply 4-pane layout button.

Walkthrough — Project Tree

- A project is the top-level container that holds all of the catalogs, processes, and modeling elements related to a particular work effort.

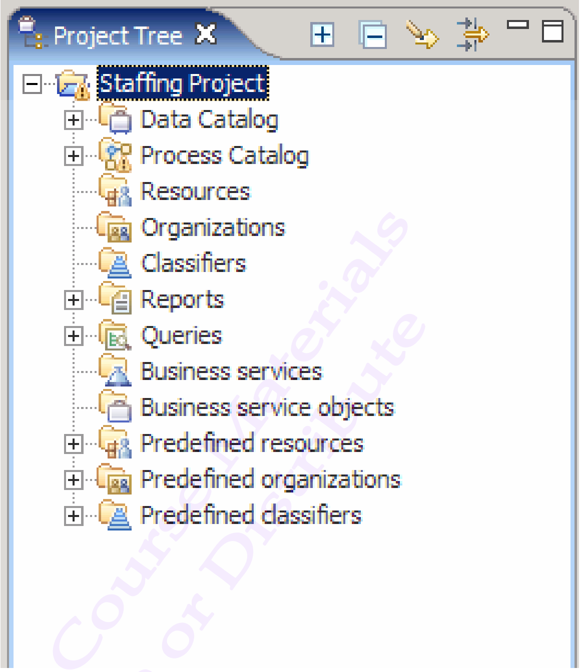
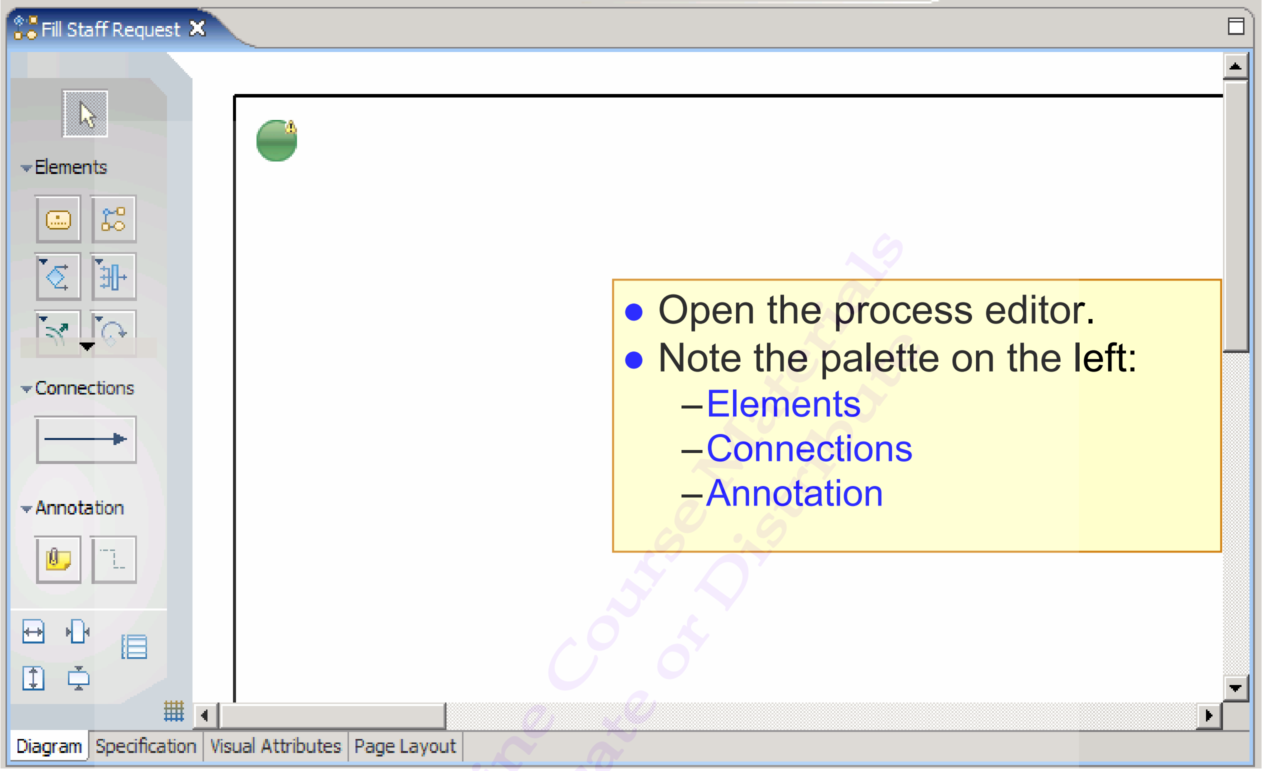


Figure 3-28. Walkthrough — Project Tree VB1841.0

Notes:

1. Examine the project tree.

Walkthrough — process editor



- Open the process editor.
- Note the palette on the left:
  - –Elements
  - –Connections
  - –Annotation

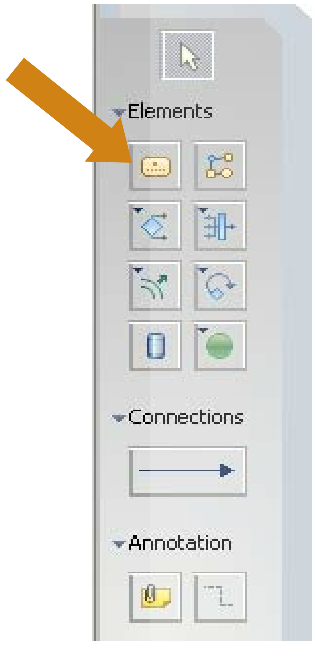
Figure 3-29. Walkthrough — process editor VB1841.0

Notes:

1. To open the process editor, from the project tree, under Processes, double-click the **Fill Staff Request** process or click the **Apply 1-pane layout** button. The Process Editor opens.

Walkthrough — add tasks (1 of 2)

- Add tasks from the toolbar.



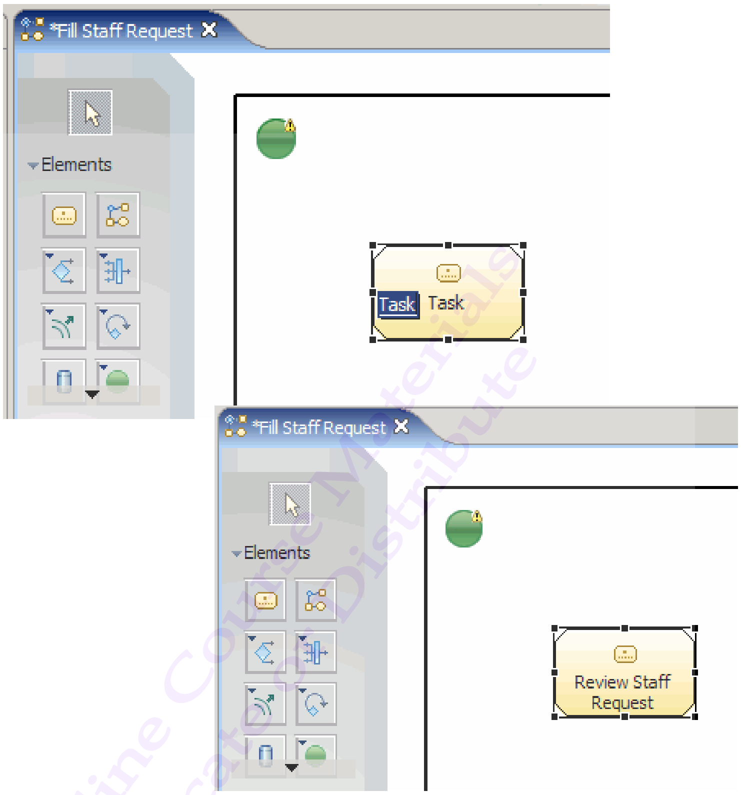


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Figure 3-30. Walkthrough — add tasks (1 of 2) VB1841.0

Notes:

2. To place a task object onto the diagram, click the **Task** button on the tool bar and place them onto the design grid.
3. Label `Review Staff Request` as the task name.

Walkthrough — add tasks (2 of 2)

- Create other tasks.

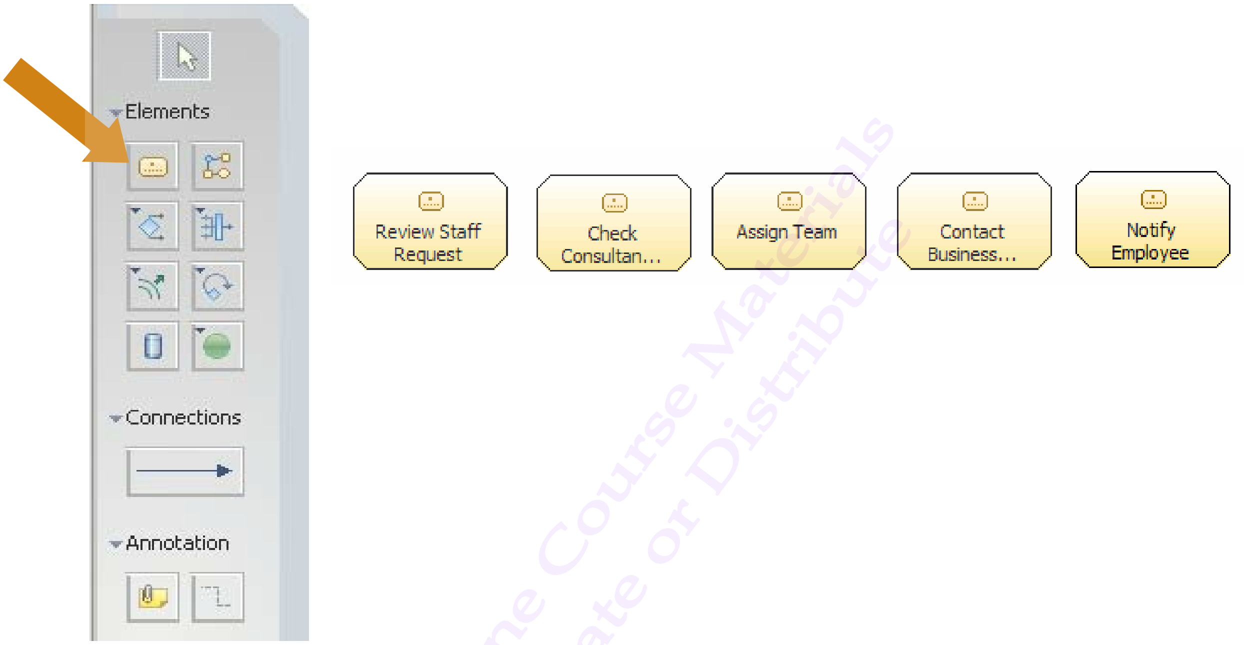


Figure 3-31. Walkthrough — add tasks (2 of 2) VB1841.0

Notes:

4. Repeat the previous steps to insert four additional tasks:
   a. Check consultant availability
   b. Assign team
   c. Contact business partner
   d. Notify employee

Walkthrough — connectors

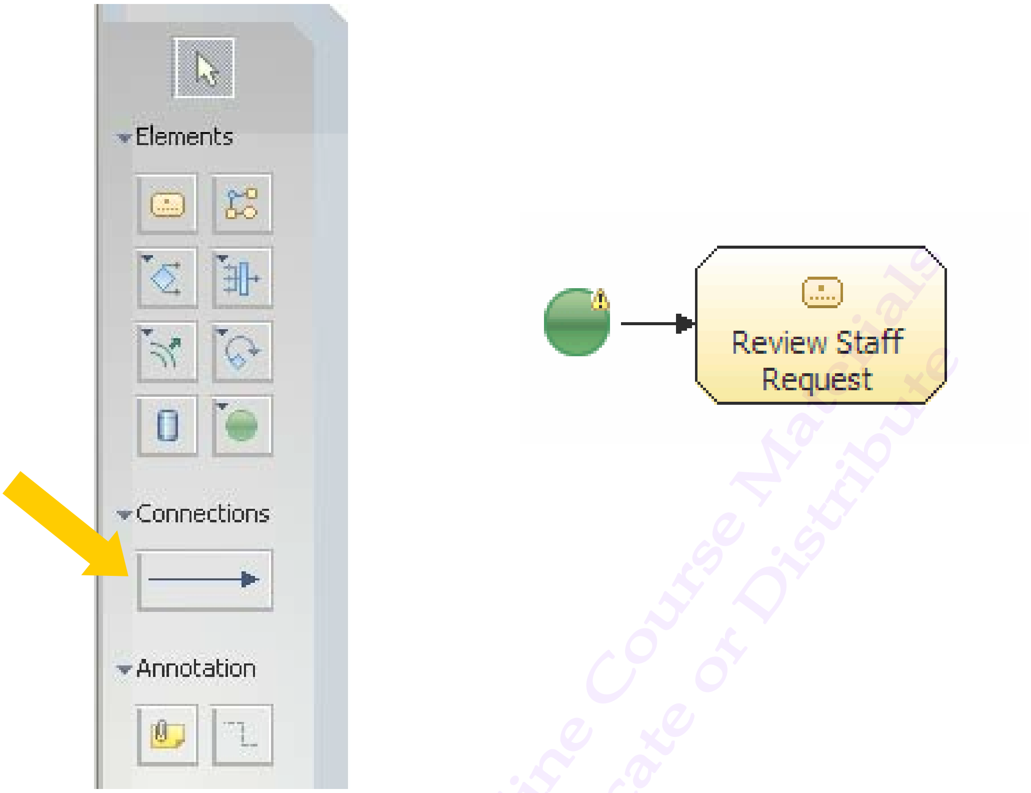
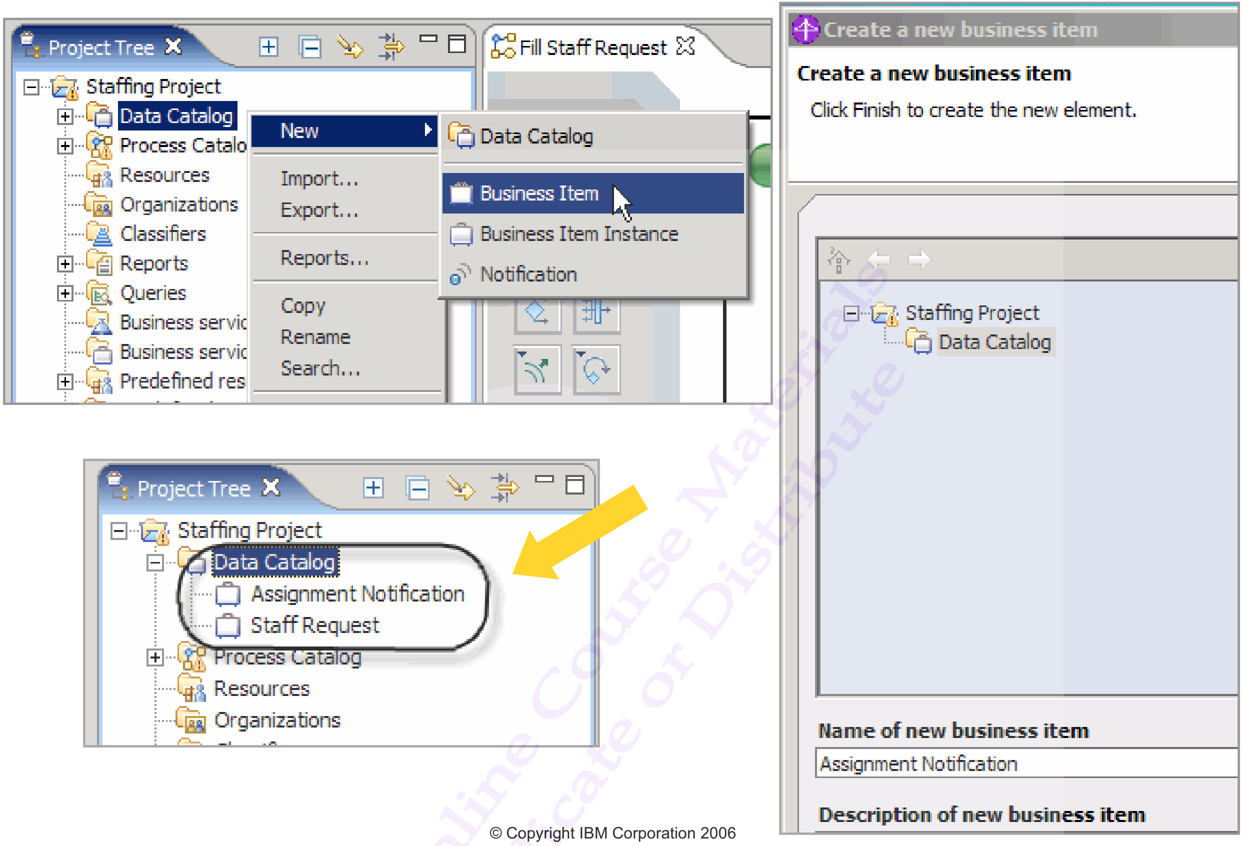


Figure 3-32. Walkthrough — connectors VB1841.0

Notes:

5. Click the connections icon to connect start (green circle) to the Review Staff Request task.

Walkthrough — adding business items



Create a new business item

Click Finish to create the new element.

Name of new business item: Assignment Notification

Description of new business item

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Figure 3-33. Walkthrough — adding business items VB1841.0

Notes:

6. Right-click the Data Catalog from the Project Tree.
7. Create a new business item called Assignment Notification.

Walkthrough — connecting elements

- Draw the line object modeling (middle to middle).

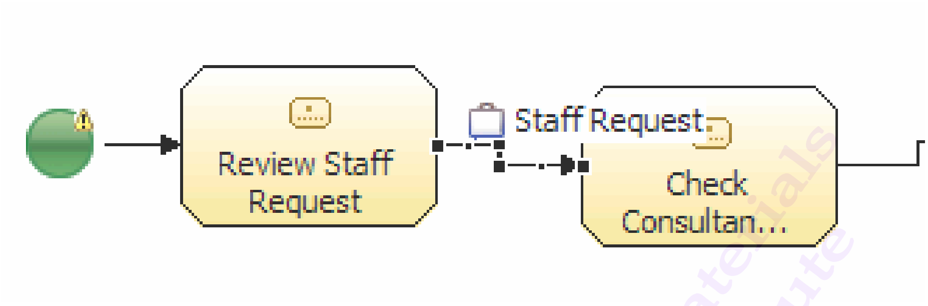
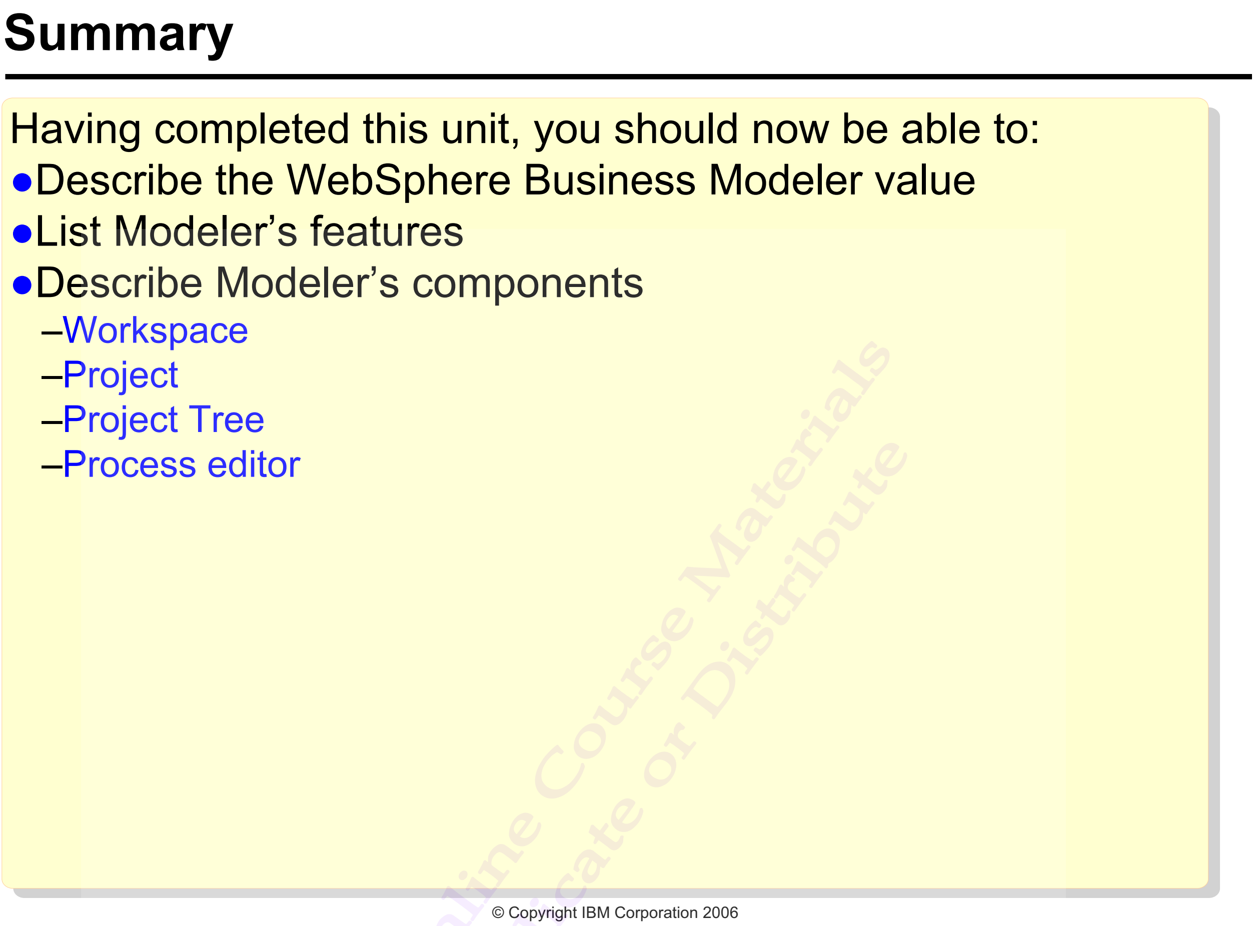


Figure 3-34. Walkthrough — connecting elements VB1841.0

Notes:



Summary

Having completed this unit, you should now be able to:

- Describe the WebSphere Business Modeler value
- List Modeler's features
- Describe Modeler's components
  - Workspace
  - Project
  - Project Tree
  - Process editor

Figure 3-35. Summary VB1841.0

Notes:

Exercise

In this exercise, you will continue to…

- Create a simple process called fill staff request

Figure 3-36. Exercise VB1841.0

Notes:

Review questions

- What are the four panes in Modeler when using the Apply 4-pane layout?
- What is the advantage of using the Quickstart wizard in Modeler?
- What is the difference between a workspace and a project?
- Name some of the analyses you can conduct using the Modeler.
- Name some of the basic elements you use in your process model.

Figure 3-37. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 4. Creating a business process diagram

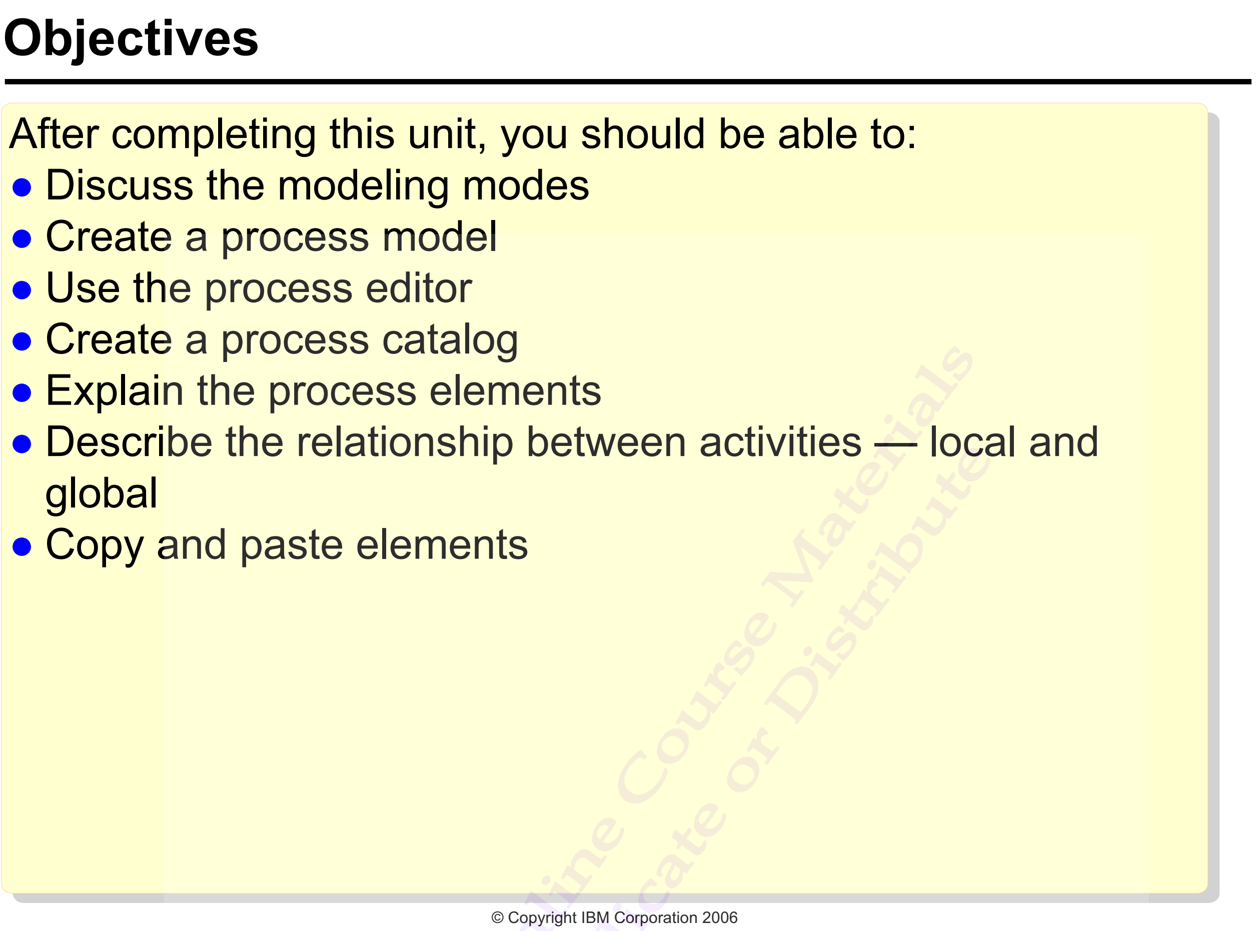
What this unit is about

This unit describes the creation of a business process diagram.

What you should be able to do

After completing this unit, you should be able to:

- Discuss the modeling modes
- Create a process model
- Use the process editor
- Create a process catalog
- Describe the process elements
- Relationship between activities — local and global
- Copy and paste elements



Objectives

After completing this unit, you should be able to:

- Discuss the modeling modes
- Create a process model
- Use the process editor
- Create a process catalog
- Explain the process elements
- Describe the relationship between activities — local and global
- Copy and paste elements

Figure 4-1. Objectives VB1841.0

Notes:

Using the process editor in WebSphere Business Modeler

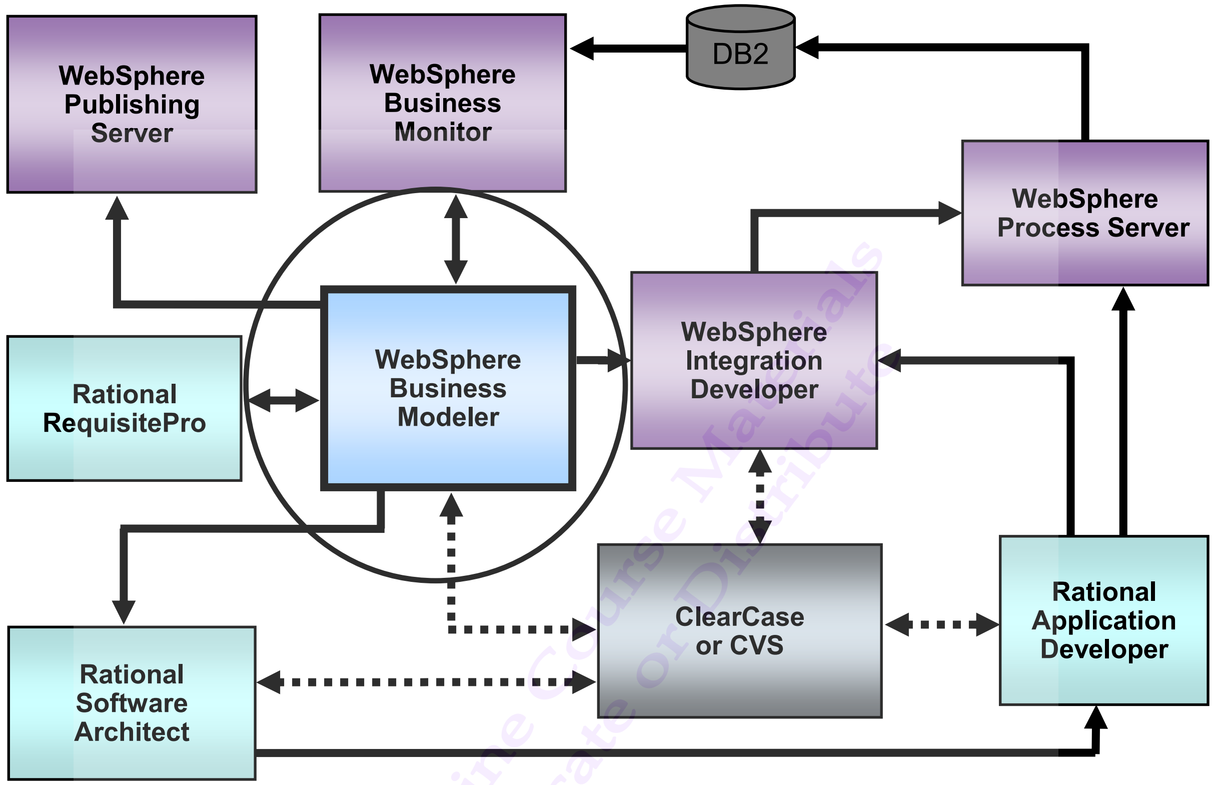

DB2
WebSphere Publishing Server
WebSphere Business Monitor
WebSphere Process Server
Rational RequisitePro
WebSphere Business Modeler
WebSphere Integration Developer
ClearCase or CVS
Rational Application Developer
Rational Software Architect

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Figure 4-2. Using the process editor in WebSphere Business Modeler VB1841.0

Notes:

WebSphere Business Modeler is just one of the tools in the toolset — when combined with the other tools it supports the entire BDD life cycle. The real focus of the class is on the Business Modeler, but you will see interfaces to the supporting and development products in the latter half of the course.

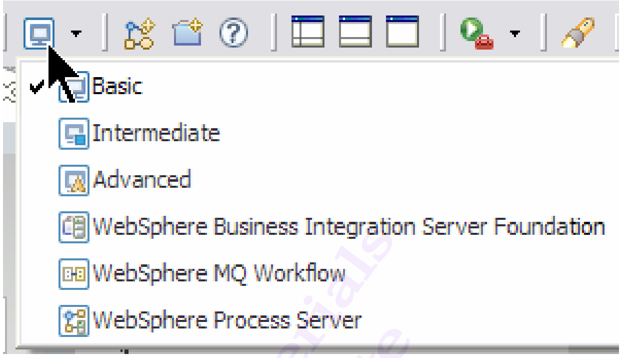
Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)

Six modeling modes

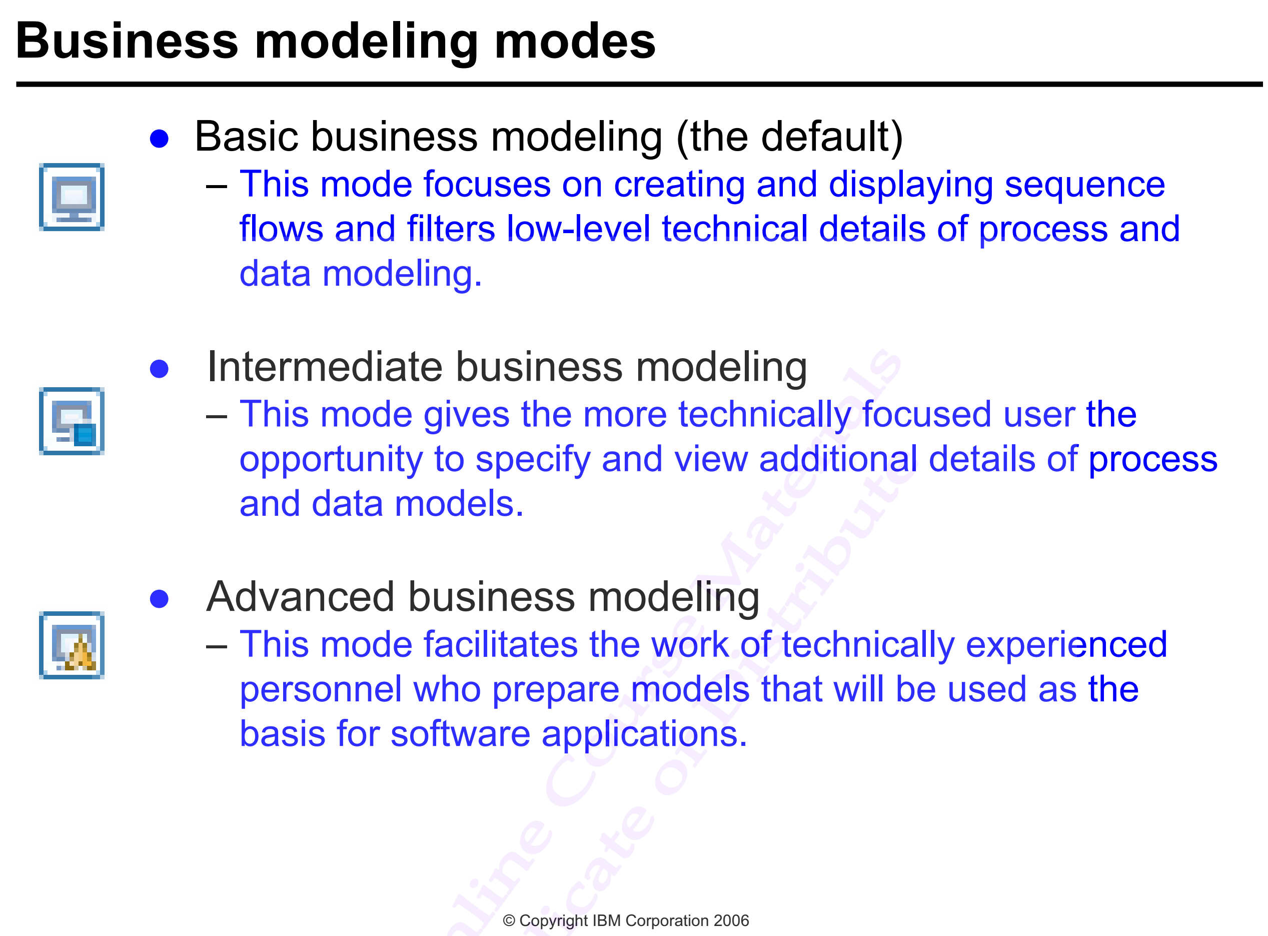
- Business modeling modes:
  - Basic business modeling
  - Intermediate business modeling
  - Advanced business modeling
- Business modeling modes applying validation rules:
  - WebSphere Business Integration Server Foundation
  - WebSphere MQ Workflow
  - WebSphere Process Server



- Switching from basic to more advanced modes, the following changes occur:
  - Some options become disabled.
  - Some notational elements become disabled.
  - A previously valid model may no longer be valid because the new mode has additional validation rules.
- No information is lost when switching modes.

Figure 4-3. Six modeling modes VB1841.0

Notes:

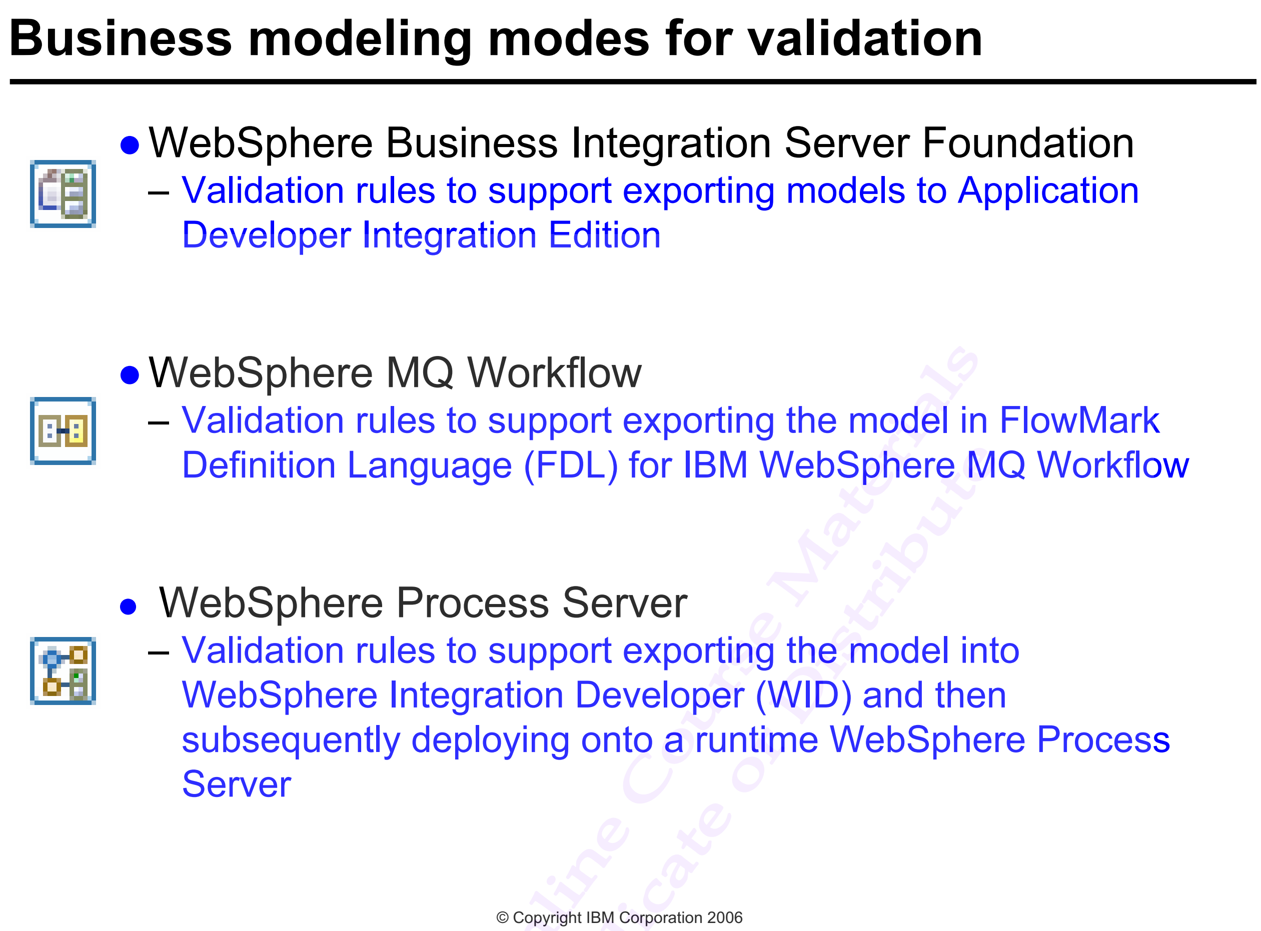


Business modeling modes

- Basic business modeling (the default)
  - This mode focuses on creating and displaying sequence flows and filters low-level technical details of process and data modeling.
- Intermediate business modeling
  - This mode gives the more technically focused user the opportunity to specify and view additional details of process and data models.
- Advanced business modeling
  - This mode facilitates the work of technically experienced personnel who prepare models that will be used as the basis for software applications.

Figure 4-4. Business modeling modes VB1841.0

Notes:



Business modeling modes for validation

- WebSphere Business Integration Server Foundation
  - Validation rules to support exporting models to Application Developer Integration Edition
- WebSphere MQ Workflow
  - Validation rules to support exporting the model in FlowMark Definition Language (FDL) for IBM WebSphere MQ Workflow
- WebSphere Process Server
  - Validation rules to support exporting the model into WebSphere Integration Developer (WID) and then subsequently deploying onto a runtime WebSphere Process Server

Figure 4-5. Business modeling modes for validation VB1841.0

Notes:

WebSphere Business Integration Server Foundation:

- This mode applies a set of validation rules to the advanced business modeling mode to support exporting models to Application Developer Integration Edition, where an implementation of the process can be created and then subsequently deployed onto a runtime application server. The validation rules constrain the model to only elements and concepts supported by WebSphere Business Integration Server Foundation.

WebSphere MQ Workflow:

- This mode applies a set of validation rules to the advanced business modeling mode to support exporting the model in FDL, which can then be imported into IBM WebSphere MQ Workflow Buildtime 3.5. The validation rules constrain the model to only elements and concepts supported by WebSphere MQ Workflow.

WebSphere Process Server:

- This mode applies a set of validation rules to the advanced business modeling mode to support exporting the model into SCA artifacts, BPEL, WSDL, and XSD files. The exported files are imported into WebSphere Integration Developer (WID), where an implementation of the process can be created and then subsequently deployed onto a runtime WebSphere Process Server. The validation rules constrain the model to only elements and concepts supported by WebSphere Process Server.

Creating a process model

- Create a project to add the process
  - Quickstart wizard
- Create a new process
  - 1 Project Tree view
    - Right-click process catalog
- Add elements to the diagram
  - 2 Process Editor view
    - Click and drop onto diagram
- Navigate to elements on the diagram
  - Scroll bars
  - 3 Outline view
    - Structure
    - Thumbnail
- Add details to the elements on the diagram
  - 4 Attribute view
    - Select element
    - Select tab

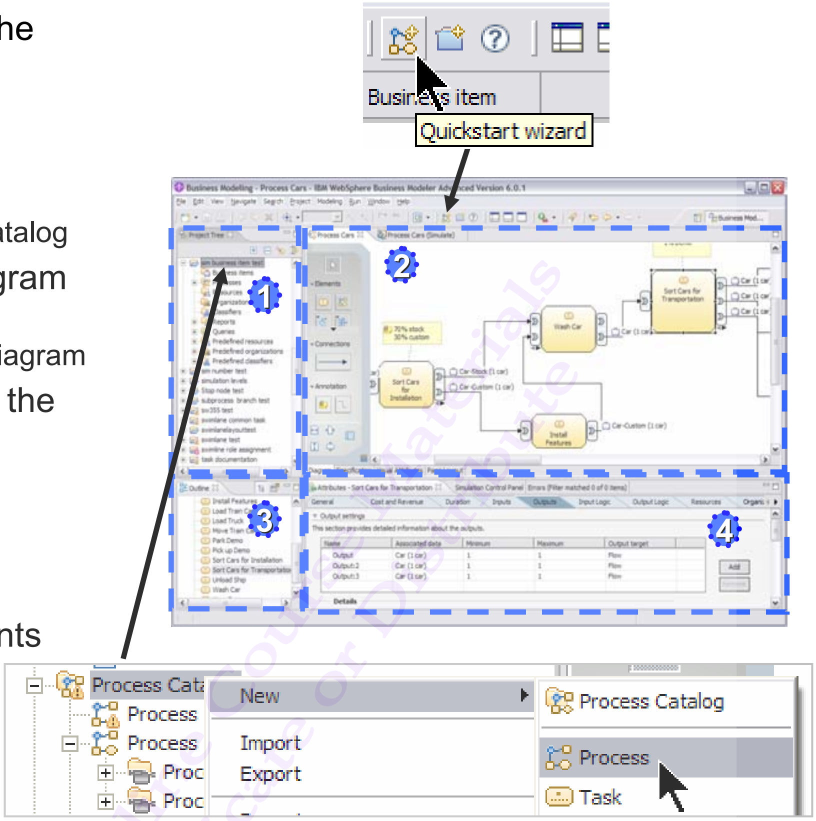


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Figure 4-6. Creating a process model

VB1841.0

Notes:

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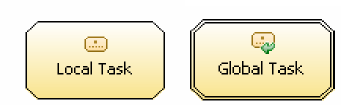
Primary elements used in modeling

- Activities — represent work
  - Task — lowest level of work that can be displayed on diagram
  - Process — units of work that are performed in a sequence
  - Service — process that is external to the organization
- Storage represents a storage area
  - Repository — places to store business items
- Flow control — determine the process flow
  - Simple decision — routes inputs to one of two paths
  - Multiple-choice decision — routes inputs to one several paths
  - Merge — combine two or more paths after an exclusive decision
  - Fork — splits path into two or more parallel paths
  - Join — combine two or more parallel paths
  - Connection — link between two elements that represents the flow
- Control nodes
  - Start — the beginning of a process not started by another process
  - Stop — marks the end of a process, required
  - End — marks the end of a path that is not the end of the process

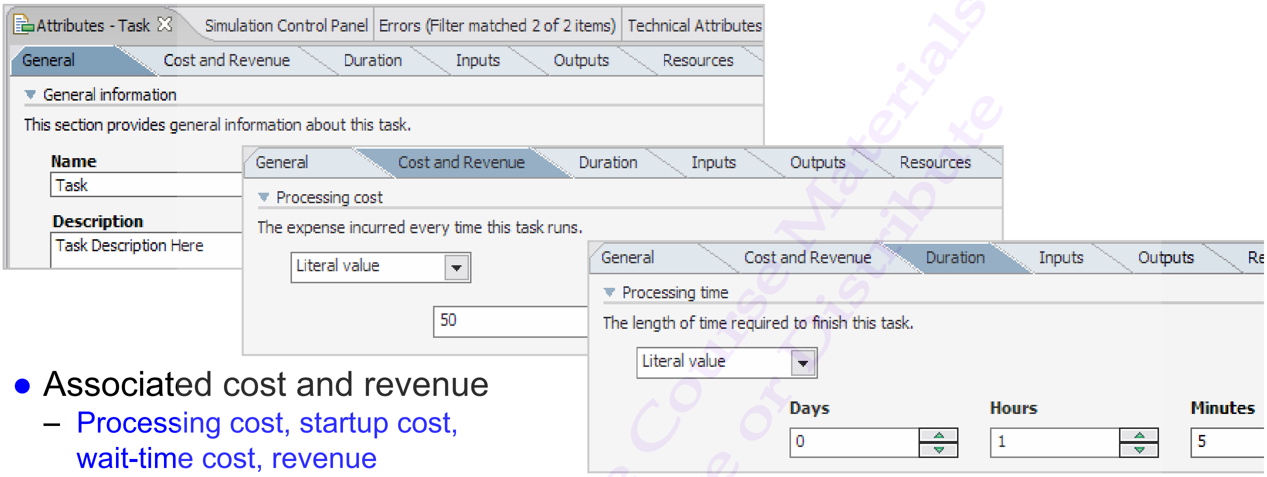
Figure 4-7. Primary elements used in modeling VB1841.0

Notes:

Task



- Basic unit of work performed in the process, cannot be decomposed
- Two types
  - Local — specific to a process, created on the pallet
  - Global — reusable within a project, created in the Project Tree
- Described in the Attributes tab or global element editor
  - Description can be displayed on diagram



General information

This section provides general information about this task.

Name: Task

Description: Task Description Here

Processing cost

The expense incurred every time this task runs.

Literal value

50

Processing time

The length of time required to finish this task.

Literal value

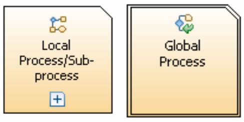
Days: 0 **Hours**: 1 **Minutes**: 5

- Associated cost and revenue
  - Processing cost, startup cost, wait-time cost, revenue
- Associated duration
  - Processing time, resource wait time

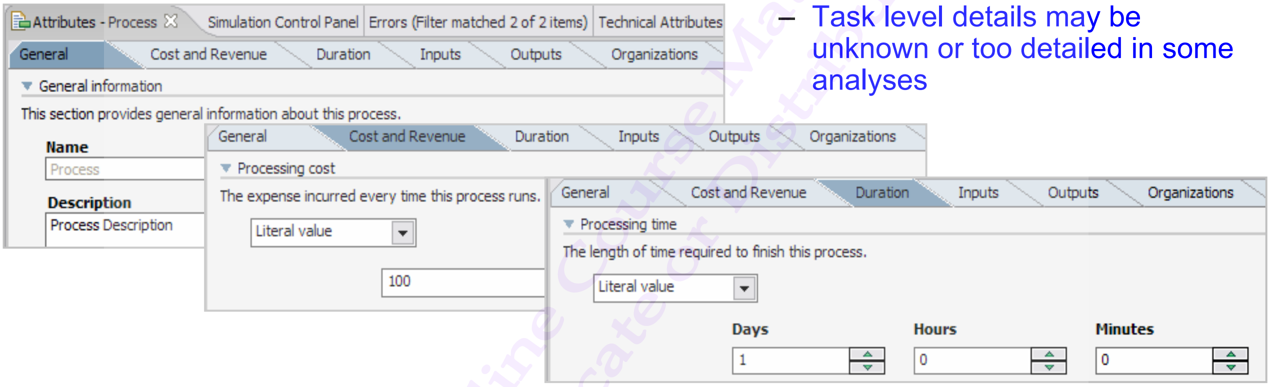
Figure 4-8. Task VB1841.0

Notes:

Process



- Processes are more complex than tasks.
  - Represented as a sequence of activities that are linked by flows of control and data.
  - Activities can be other processes as well as tasks and other elements that control flow.
- Decisions in a process determine the way a process is executed.
  - Each possible path of execution is known as a case.
- Two types:
  - Local — specific to a process, created on the pallet
  - Global — reusable within a project, created in the project tree
- Described in the Attributes tab
  - Description can be displayed on diagram
- Associated cost, revenue, and duration can specified at the process level
  - Task level details may be unknown or too detailed in some analyses



General information

This section provides general information about this process.

Name: Process

Description: Process Description

Processing cost

The expense incurred every time this process runs.

Literal value

100

Processing time

The length of time required to finish this process.

Literal value

Days	Hours	Minutes
1	0	0

Figure 4-9. Process

VB1841.0

Notes:

Service

- Services are external processes executed outside the organization.
  - Can be used within or by the organization's processes
- Services are similar to processes, but the internal activities are unknown.
  - Treated as a “black-box”, outside the control of the organization
- Essential to modeling the realities of business-to-business integration.
  - Represent organizations like credit bureaus, payroll companies, or shipping companies
- One type.
  - Global by definition — reusable within a project, created in the project tree
- Described in the global element editor.
  - Description can be displayed on diagram
- Associated cost, revenue, and duration are specified for the whole service.
  - Task level details are unknown, “black-box”

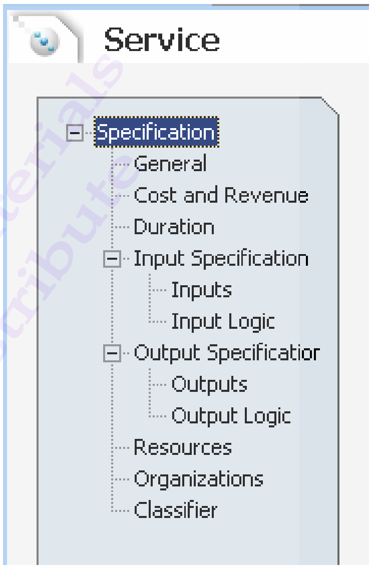
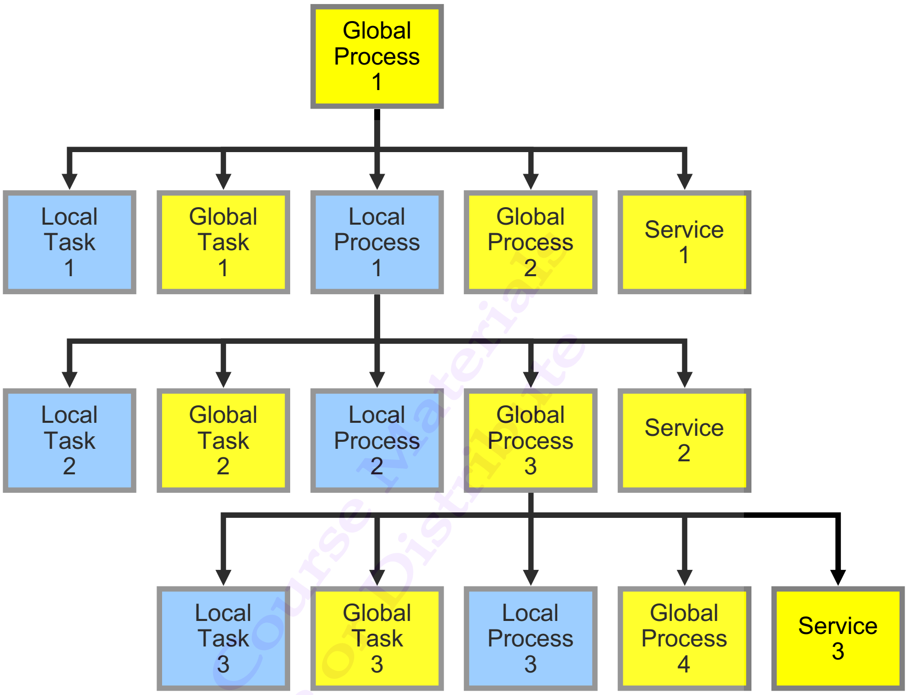


Figure 4-10. Service VB1841.0

Notes:

Relationships between activities

Process Catalog
- **-Global Process 1**
- **-Global Process 2**
- **-Global Process 3**
- **-Global Process 4**
- **-Global Task 1**
- **-Global Task 2**
- **-Global Task 3**
- **-Service 1**
- **-Service 2**
- **-Service 3**



Global Process 1

Local Task 1 | Global Task 1 | Local Process 1 | Global Process 2 | Service 1

Local Task 2 | Global Task 2 | Local Process 2 | Global Process 3 | Service 2

Local Task 3 | Global Task 3 | Local Process 3 | Global Process 4 | Service 3

Figure 4-11. Relationship between activities VB1841.0

Notes:

Converting elements

- Elements can be changed during the documentation or design process
- Converting a local task to a local process
  - The task really contains several tasks
- Converting a local process to a local task
  - The process is really at the lowest level that can be displayed
- Converting local tasks and processes to global tasks, processes, or services
  - Activities are reusable or will require specific analysis
  - New global elements will appear in the Project Tree
    - All the existing attributes and connections will be maintained

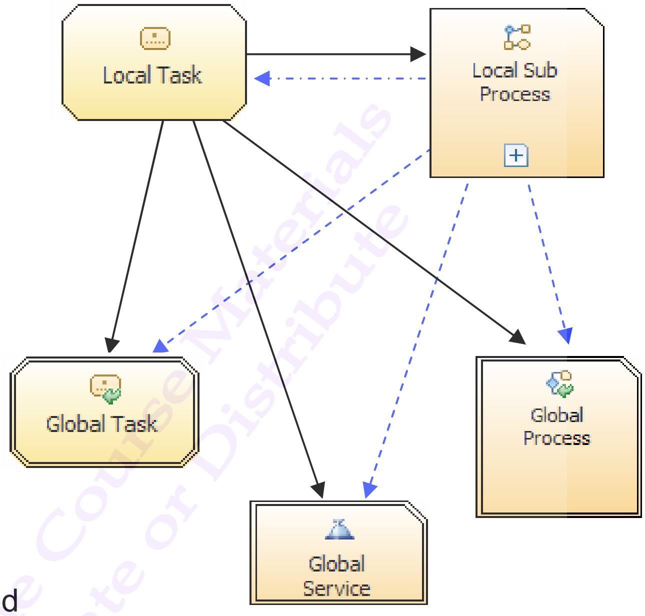


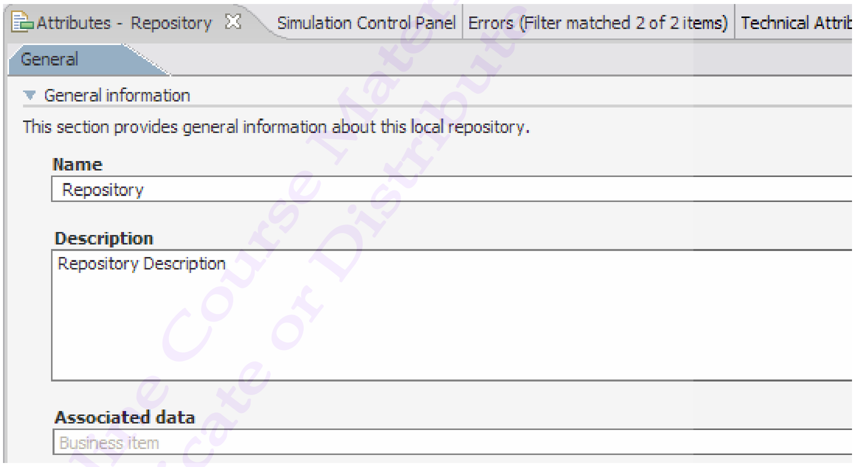
Figure 4-12. Converting elements

VB1841.0

Notes:

Repository

- Repositories represent locations for business items
  - Business items are either taken from or placed in a repository
- A repository can only hold a single type of business item
  - Multiple business items must be combined into a new business item before they can be stored in a repository
- Two types
  - Local — specific to a process, created on the pallet
  - Global — reusable within a project, created in the project tree
- Described in the attributes tab or global element editor
  - Description can be displayed on the diagram
- One business item specified for each repository



General information

This section provides general information about this local repository.

Name
Repository

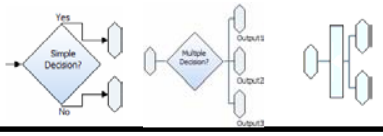
Description
Repository Description

Associated data
Business item

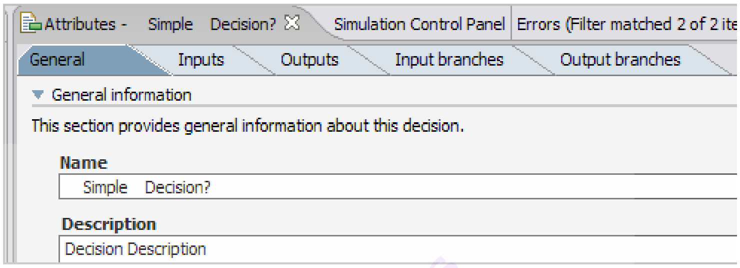
Figure 4-13. Repository VB1841.0

Notes:

Decisions and fork



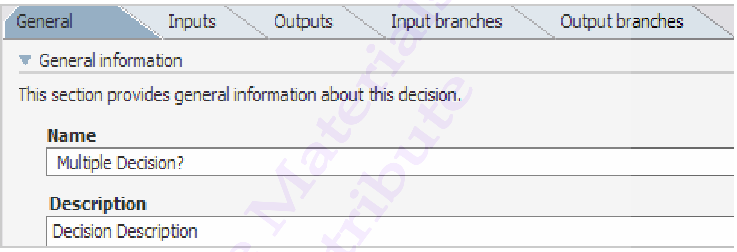
- Decisions are flow control constructs rather than activities like tasks or processes
  - Have no costs or duration
  - Used to show alternate paths from a preceding activity
  - Named in the form of a question — “Type of order?”
- Simple decision
  - Has one incoming branch with one input and two exclusive outgoing branches, one output each
- Multiple-choice decision
  - Has one incoming branch and multiple outgoing branches
  - Incoming branch allows more than one input
  - Each outgoing branch has an associated condition, can be inclusive
  - Output branches can be labeled
- Fork — a fork splits the process flow into parallel paths
  - Enables two or more paths to be performed independently of each other
  - A fork makes copies of its inputs and forwards them along each of the parallel paths
- Branching and splitting conditions are specified in the attributes tab



This section provides general information about this decision.

Name
Simple Decision?

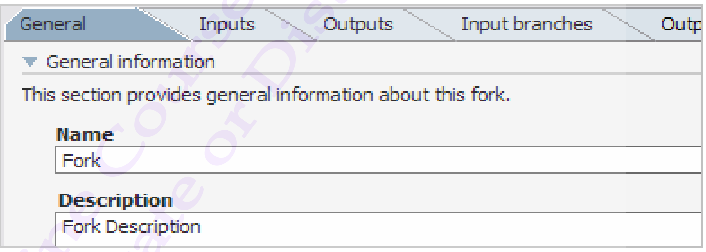
Description
Decision Description



This section provides general information about this decision.

Name
Multiple Decision?

Description
Decision Description



This section provides general information about this fork.

Name
Fork

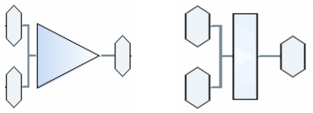
Description
Fork Description

Figure 4-14. Decisions and fork

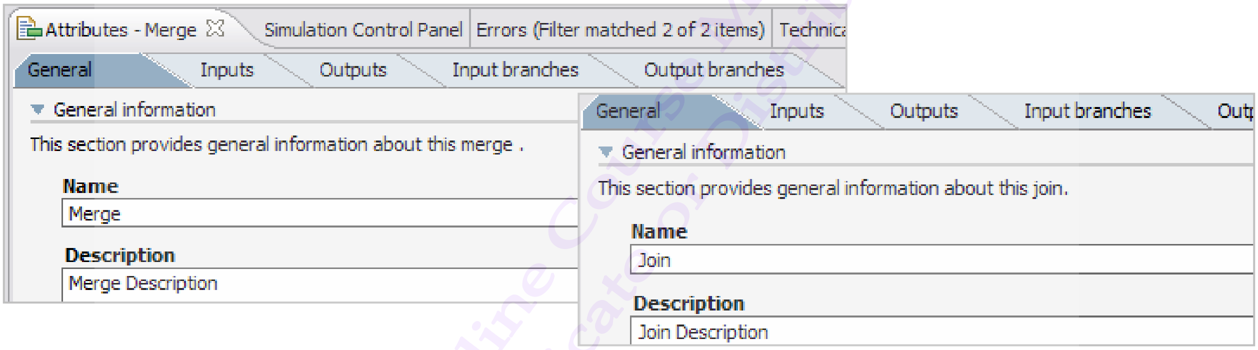
VB1841.0

Notes:

Merge and join



- Merge and join
  - Combine multiple processing paths into a single flow
- Merge
  - Combines two or more alternative paths back into a single flow
  - Merges and exclusive decisions work well together
    - Only one outgoing branch of an exclusive decision is ever taken
    - A merge runs whenever one of its incoming branches is satisfied
- Join
  - Combines two or more parallel flows back into a single flow
  - A join synchronizes the paths, by waiting for each input to arrive
    - Only permitting the output to continue after all inputs have arrived
  - Joins and forks work well together
    - All outgoing branches of a fork are taken
    - A join runs when all of its incoming branches are satisfied
- Merging and joining conditions are specified in the Attributes tab



General information

This section provides general information about this merge .

Name
Merge

Description
Merge Description

General information

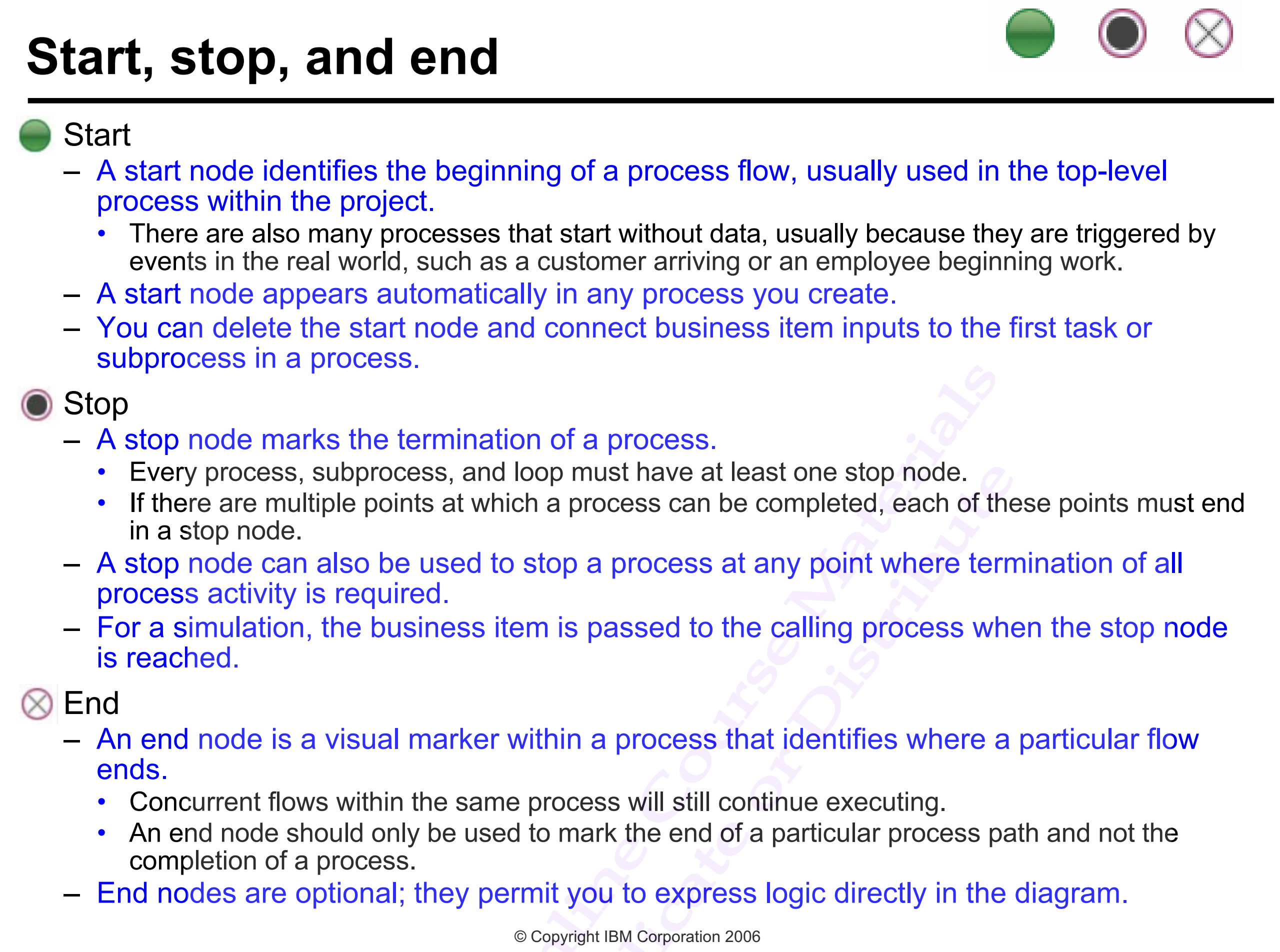
This section provides general information about this join.

Name
Join

Description
Join Description

Figure 4-15. Merge and join VB1841.0

Notes:



Start, stop, and end

● ◉ ⊗

- ● Start
  - A start node identifies the beginning of a process flow, usually used in the top-level process within the project.
    - There are also many processes that start without data, usually because they are triggered by events in the real world, such as a customer arriving or an employee beginning work.
  - A start node appears automatically in any process you create.
  - You can delete the start node and connect business item inputs to the first task or subprocess in a process.
- ◉ Stop
  - A stop node marks the termination of a process.
    - Every process, subprocess, and loop must have at least one stop node.
    - If there are multiple points at which a process can be completed, each of these points must end in a stop node.
  - A stop node can also be used to stop a process at any point where termination of all process activity is required.
  - For a simulation, the business item is passed to the calling process when the stop node is reached.
- ⊗ End
  - An end node is a visual marker within a process that identifies where a particular flow ends.
    - Concurrent flows within the same process will still continue executing.
    - An end node should only be used to mark the end of a particular process path and not the completion of a process.
  - End nodes are optional; they permit you to express logic directly in the diagram.

Figure 4-16. Start, stop, and end VB1841.0

Notes:

Use of stop and end

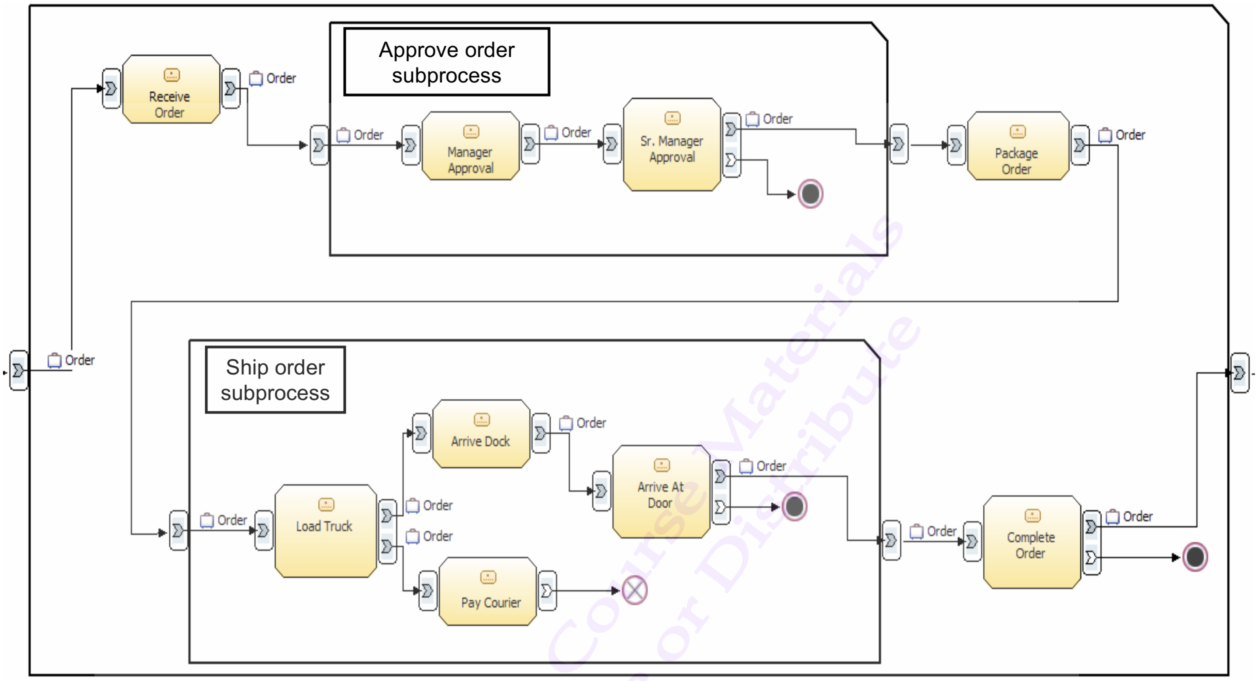


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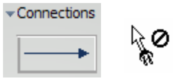
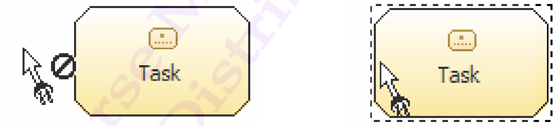
Figure 4-17. Use of stop and end VB1841.0

Notes:

Connector



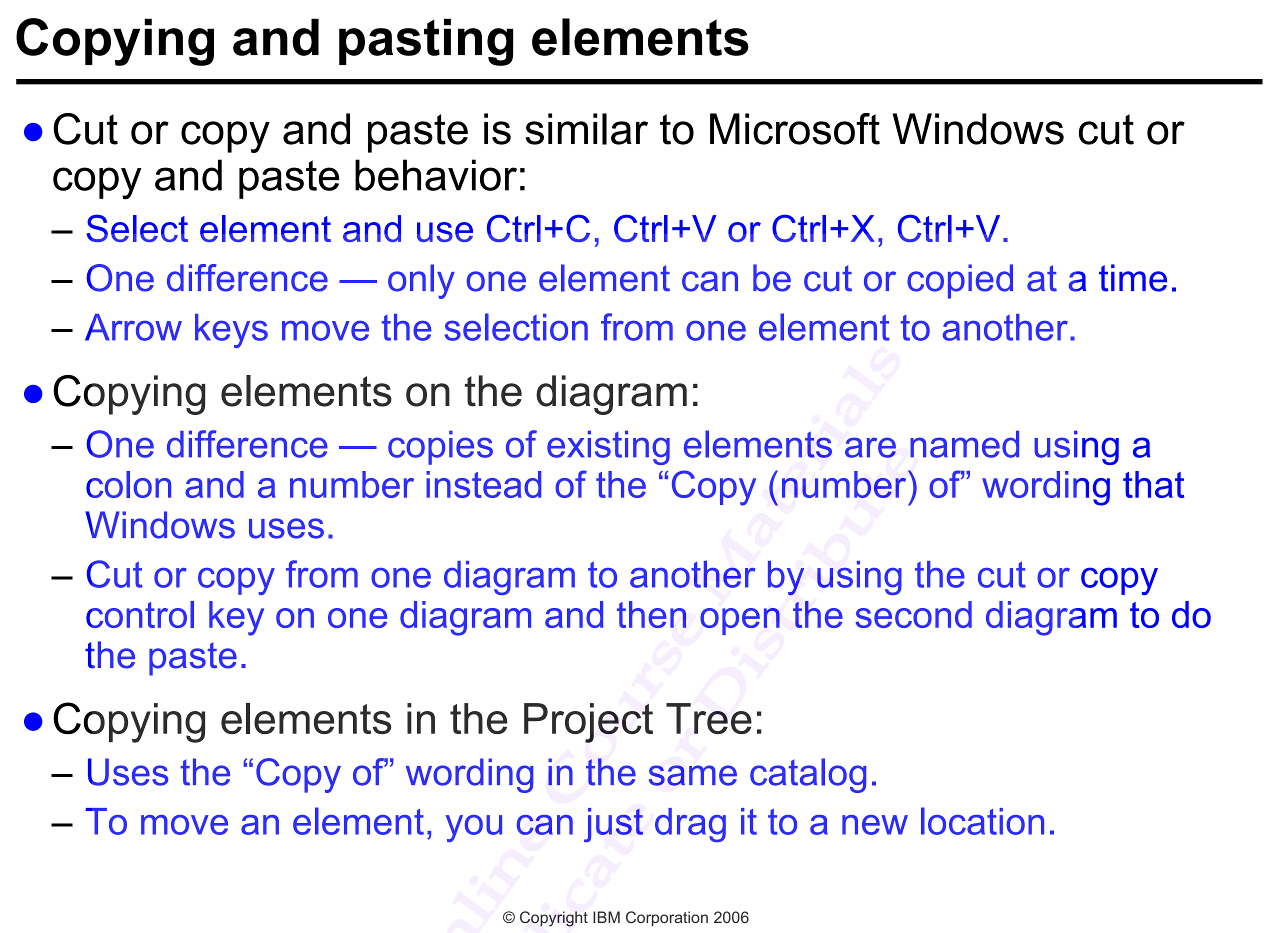
- A connection is a link between two elements.
- Connections are used to specify the chronological sequence of activities in a process.
  - Each task, subprocess, decision, or other element passes control to the next task or element along a connection.
  - You can associate business items with connections to pass data from element to element.
  - Each connection can have only one associated business item.
    - You can use multiple connections if you need to pass multiple business items between two elements.
- The connector icon appears as a plug with an arrowhead indicating the connection point.
  - A “Not” symbol appears when the cursor is over a position that cannot be connected.
  - The “Not” symbol disappears when over a valid connection point.



- If you place the mouse pointer over a connection in the process diagram, the source of the connection and the target of the connection are displayed.
- In a very large diagram you can split the connection and have it be represented by two individual nodes and connections.

Figure 4-18. Connector VB1841.0

Notes:

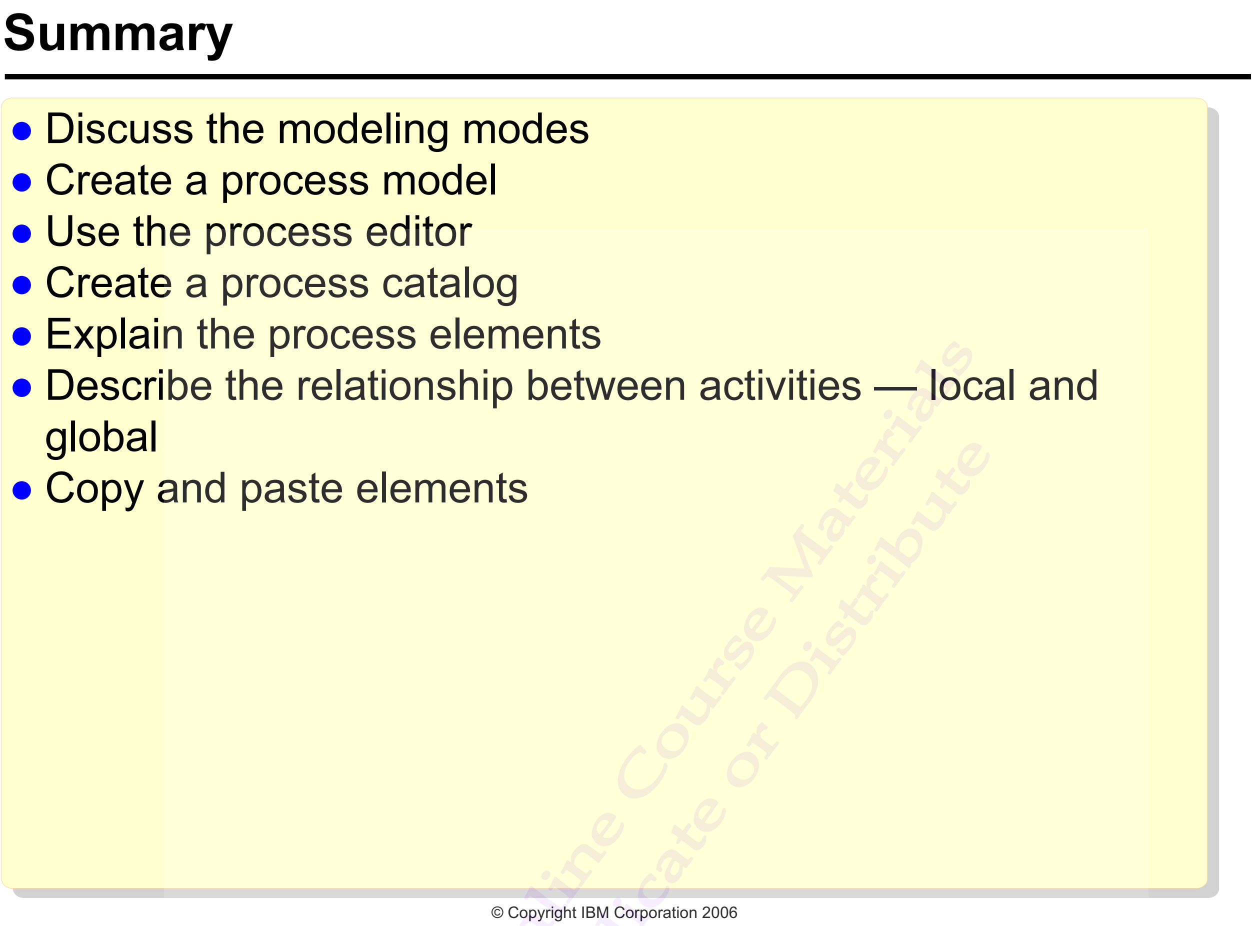


Copying and pasting elements

- Cut or copy and paste is similar to Microsoft Windows cut or copy and paste behavior:
  - Select element and use Ctrl+C, Ctrl+V or Ctrl+X, Ctrl+V.
  - One difference — only one element can be cut or copied at a time.
  - Arrow keys move the selection from one element to another.
- Copying elements on the diagram:
  - One difference — copies of existing elements are named using a colon and a number instead of the “Copy (number) of” wording that Windows uses.
  - Cut or copy from one diagram to another by using the cut or copy control key on one diagram and then open the second diagram to do the paste.
- Copying elements in the Project Tree:
  - Uses the “Copy of” wording in the same catalog.
  - To move an element, you can just drag it to a new location.

Figure 4-19. Copying and pasting elements VB1841.0

Notes:

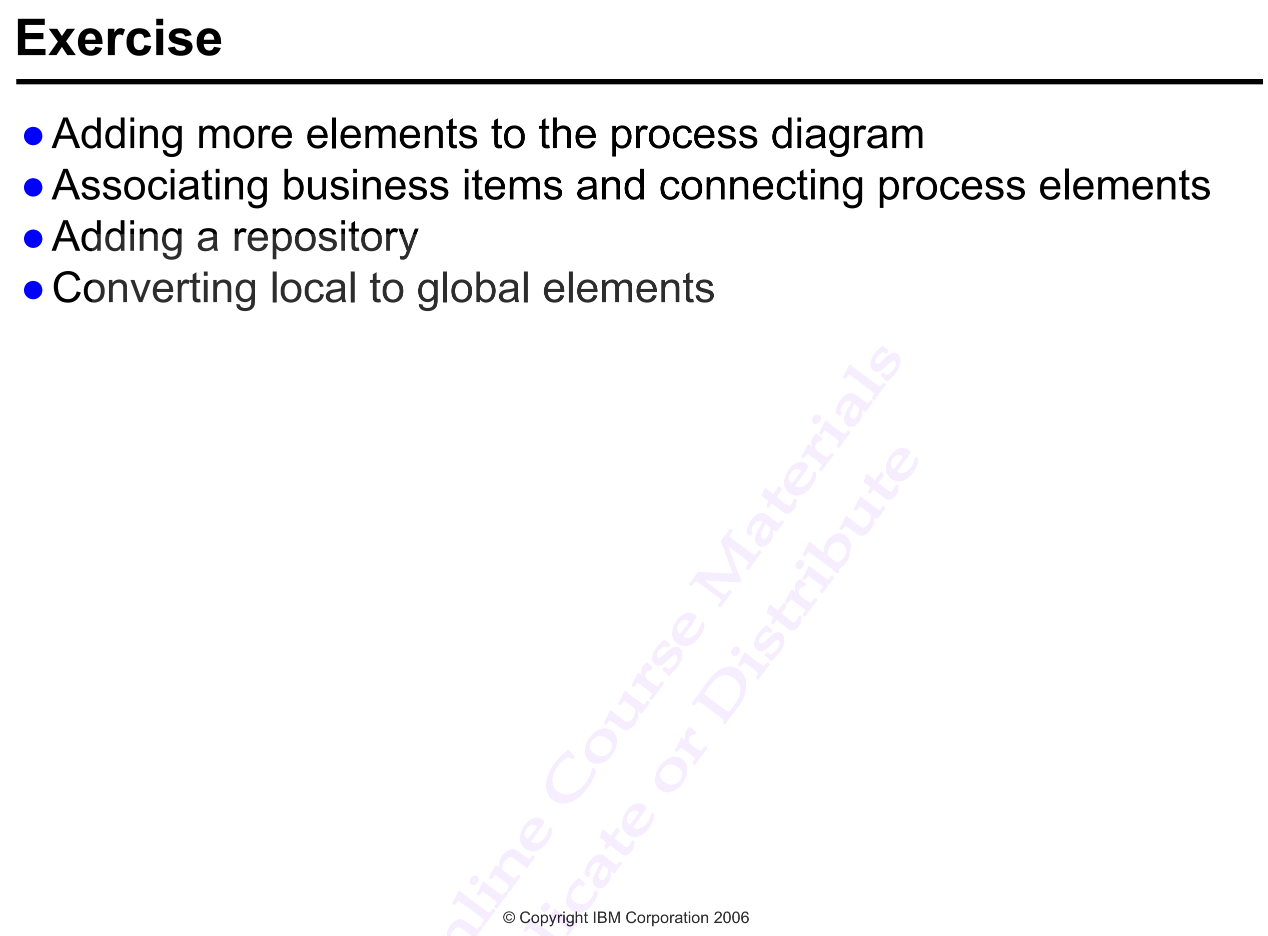


Summary

- Discuss the modeling modes
- Create a process model
- Use the process editor
- Create a process catalog
- Explain the process elements
- Describe the relationship between activities — local and global
- Copy and paste elements

Figure 4-20. Summary VB1841.0

Notes:



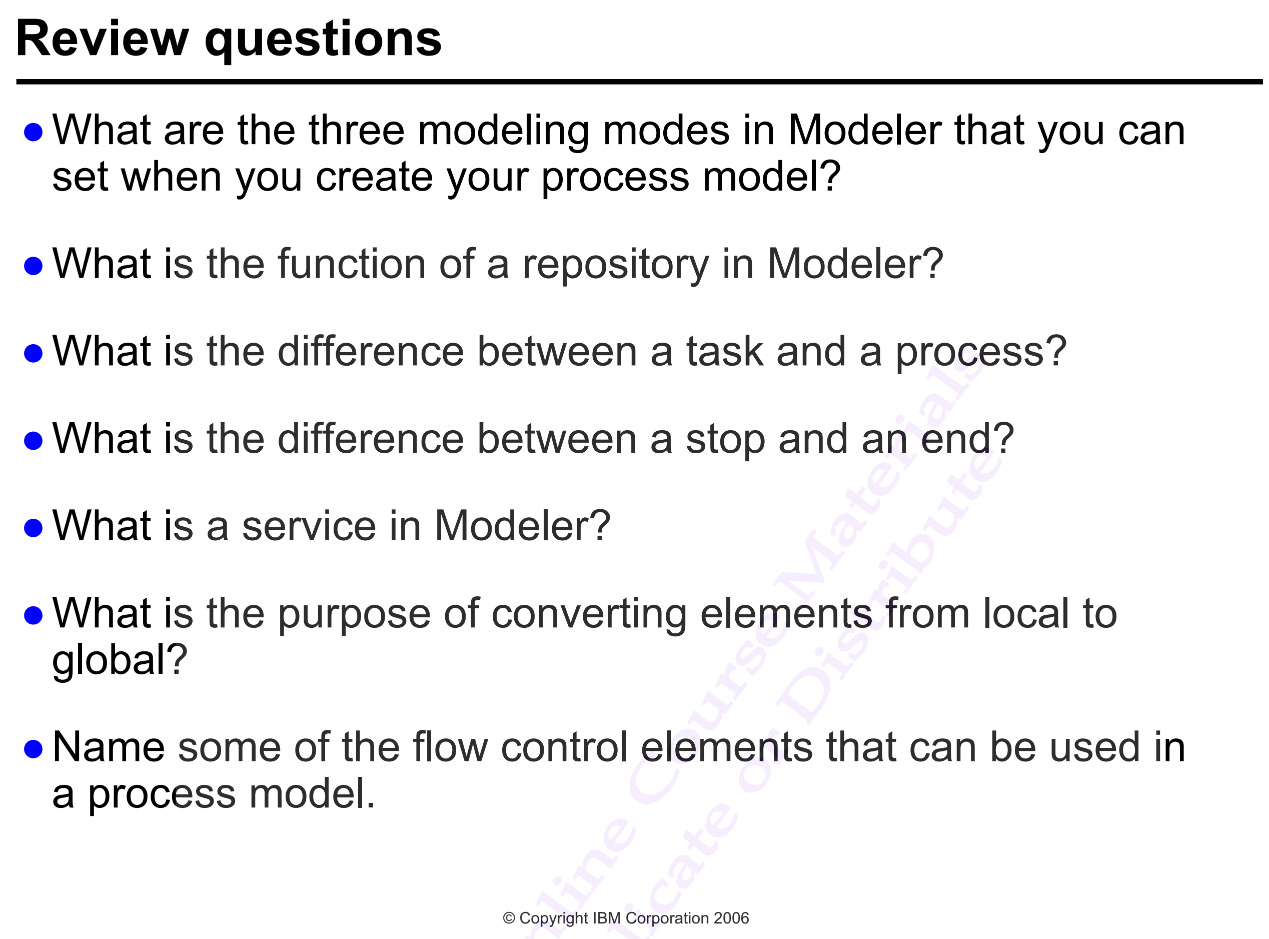
Exercise

- Adding more elements to the process diagram
- Associating business items and connecting process elements
- Adding a repository
- Converting local to global elements

Figure 4-21. Exercise

VB1841.0

Notes:



Review questions

- What are the three modeling modes in Modeler that you can set when you create your process model?
- What is the function of a repository in Modeler?
- What is the difference between a task and a process?
- What is the difference between a stop and an end?
- What is a service in Modeler?
- What is the purpose of converting elements from local to global?
- Name some of the flow control elements that can be used in a process model.

Figure 4-22. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 5. Define elements and attributes

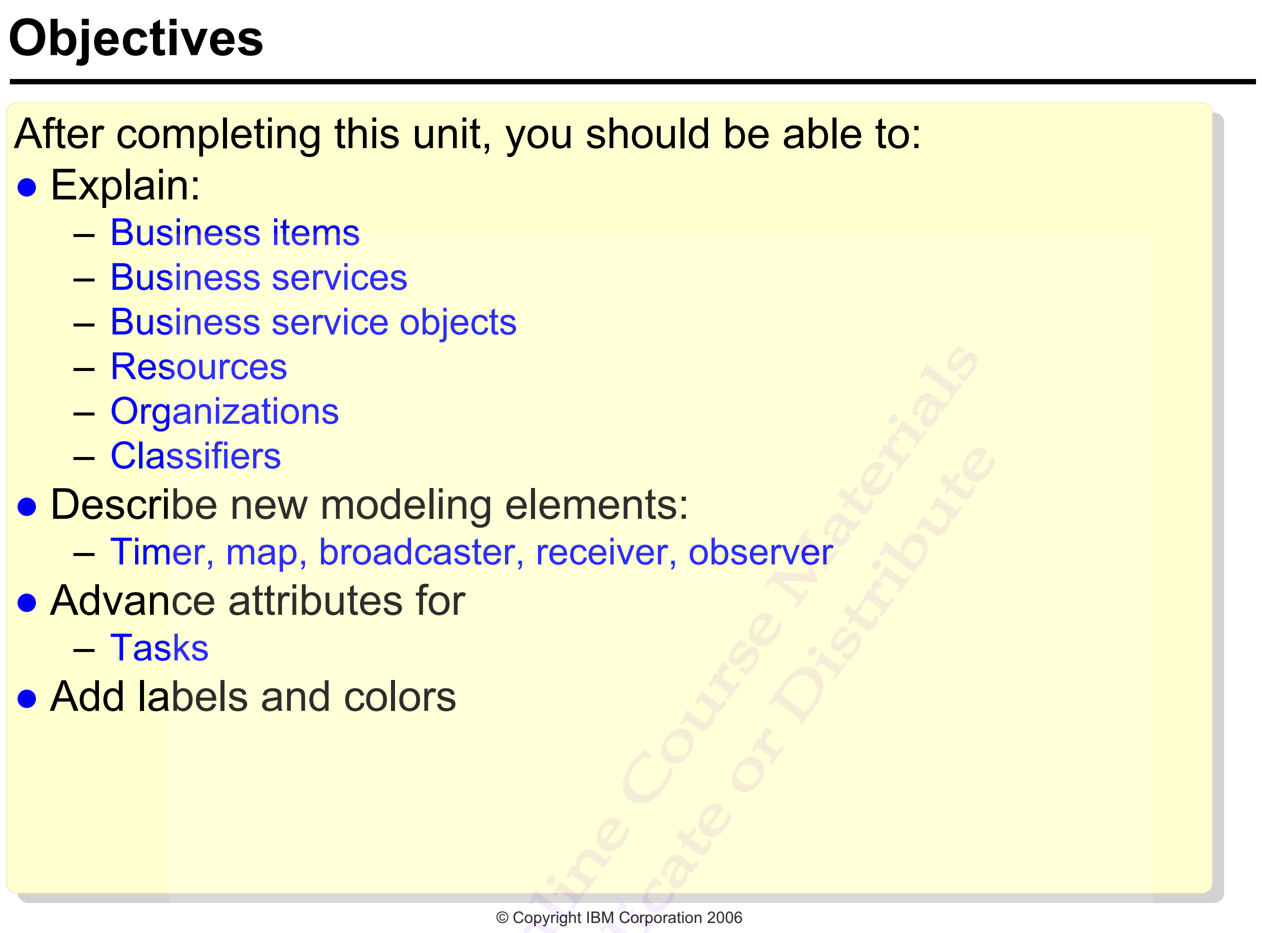
What this unit is about

This unit describes how to define elements and attributes.

What you should be able to do

After completing this unit, you should be able to:

- Explain:
  - Business items
  - Business services
  - Business service objects
  - Resources
  - Organizations
  - Classifiers
- Describe new modeling elements — timer, map, broadcaster, receiver, observer
- Advance attributes for tasks
- Add labels and colors



Objectives

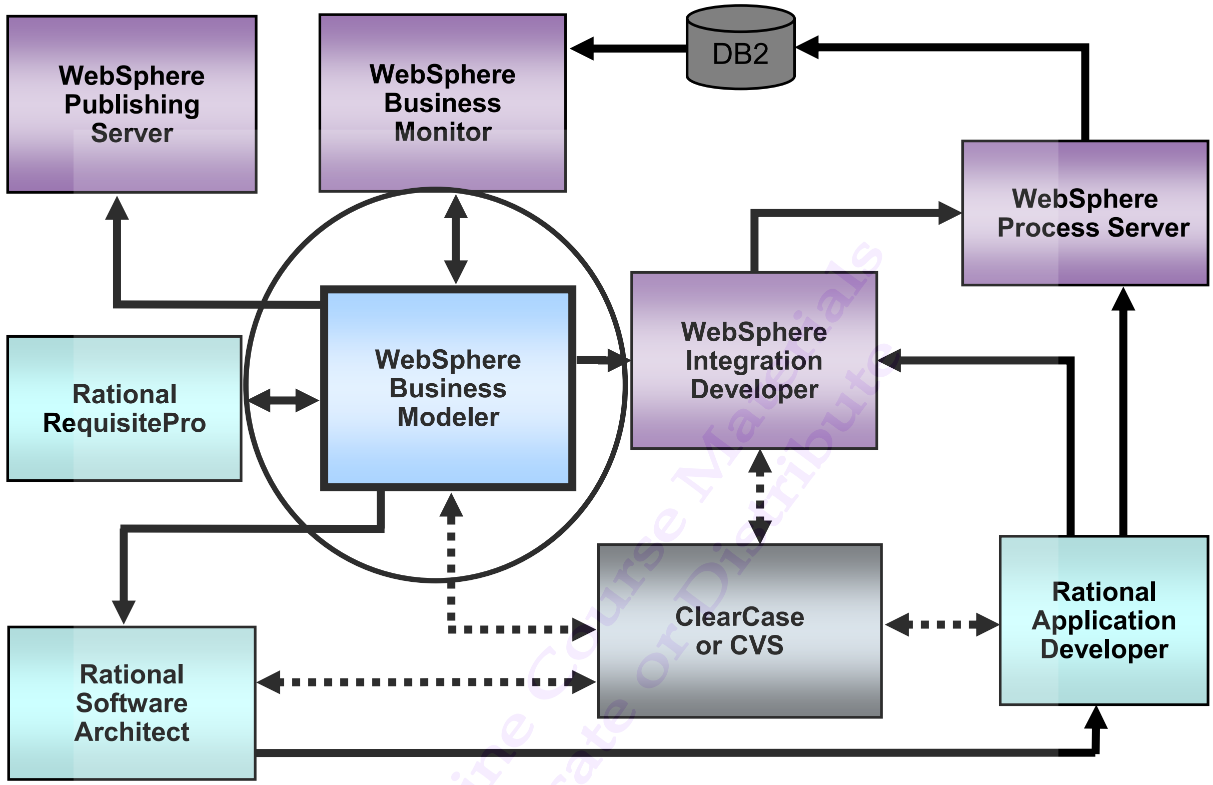
After completing this unit, you should be able to:

- Explain:
  - Business items
  - Business services
  - Business service objects
  - Resources
  - Organizations
  - Classifiers
- Describe new modeling elements:
  - Timer, map, broadcaster, receiver, observer
- Advance attributes for
  - Tasks
- Add labels and colors

Figure 5-1. Objectives VB1841.0

Notes:

Adding details to the process model



WebSphere Publishing Server

WebSphere Business Monitor

DB2

WebSphere Process Server

WebSphere Business Modeler

WebSphere Integration Developer

Rational RequisitePro

ClearCase or CVS

Rational Application Developer

Rational Software Architect

Figure 5-2. Adding details to the process model VB1841.0

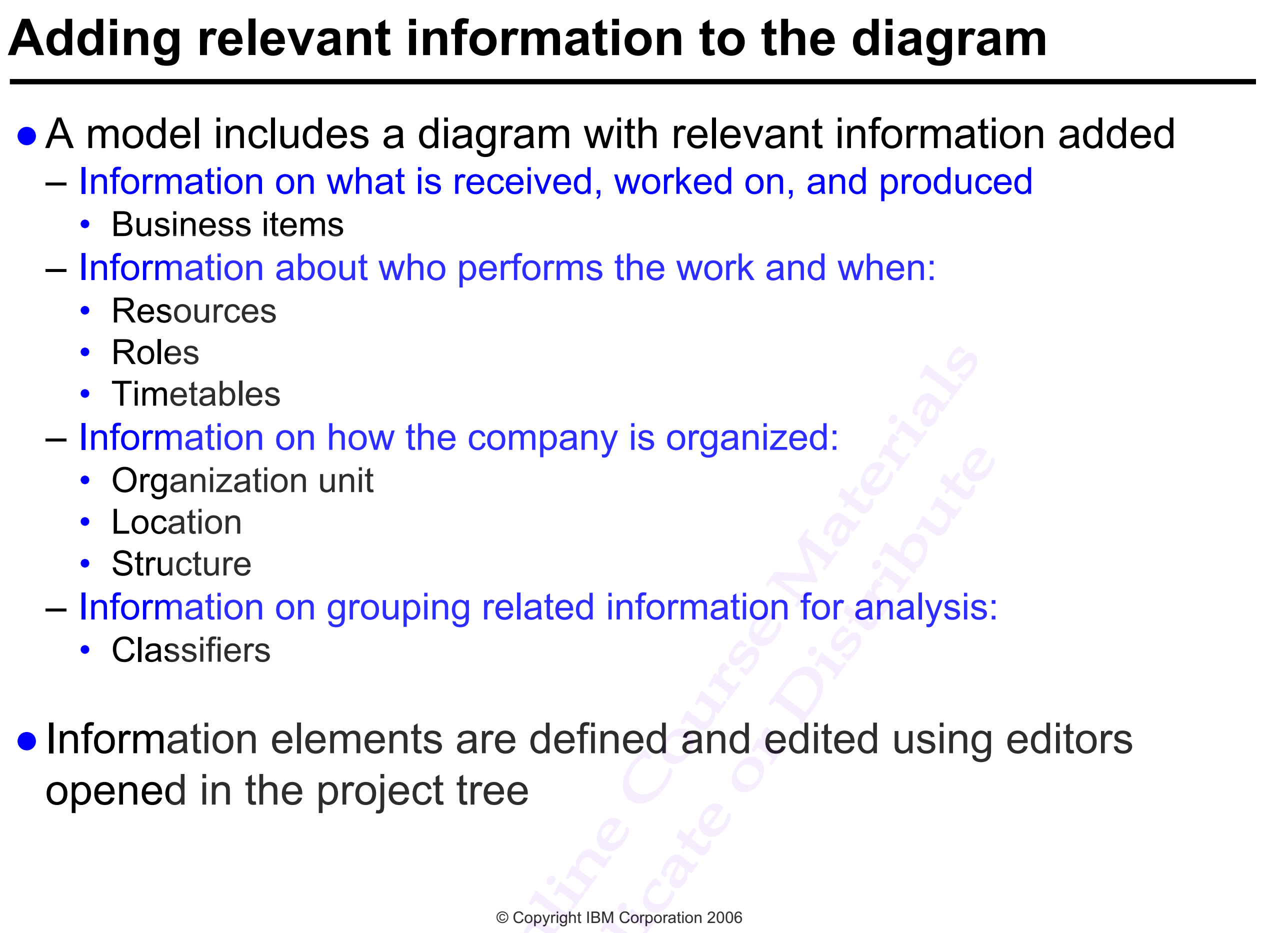
Notes:

WebSphere Business Modeler is just one of the tools in the toolset — when combined with the other tools it supports the entire BDD life cycle. The real focus of the class is on the Business Modeler, but you will see interfaces to the supporting and development products in the latter half of the course.

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)



Adding relevant information to the diagram

- A model includes a diagram with relevant information added
  - Information on what is received, worked on, and produced
    - Business items
  - Information about who performs the work and when:
    - Resources
    - Roles
    - Timetables
  - Information on how the company is organized:
    - Organization unit
    - Location
    - Structure
  - Information on grouping related information for analysis:
    - Classifiers
- Information elements are defined and edited using editors opened in the project tree

Figure 5-3. Adding relevant information to the diagram VB1841.0

Notes:

What is a business item?

- Business items
  - Business data, documents, work products, or physical commodities that are transformed by the process
  - Anything that is created, assembled, inspected, tested, modified, or worked on
  - Represented by an icon on the diagram
- Structure of a business item
  - Customer order
    - Customer information
      - First name
      - Last name
      - Street address
      - City
      - State
      - Zip code
    - Order detail
      - Item 1
      - Quantity
      - Item 2
      - Quantity

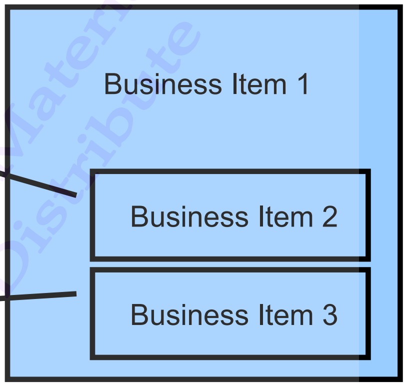
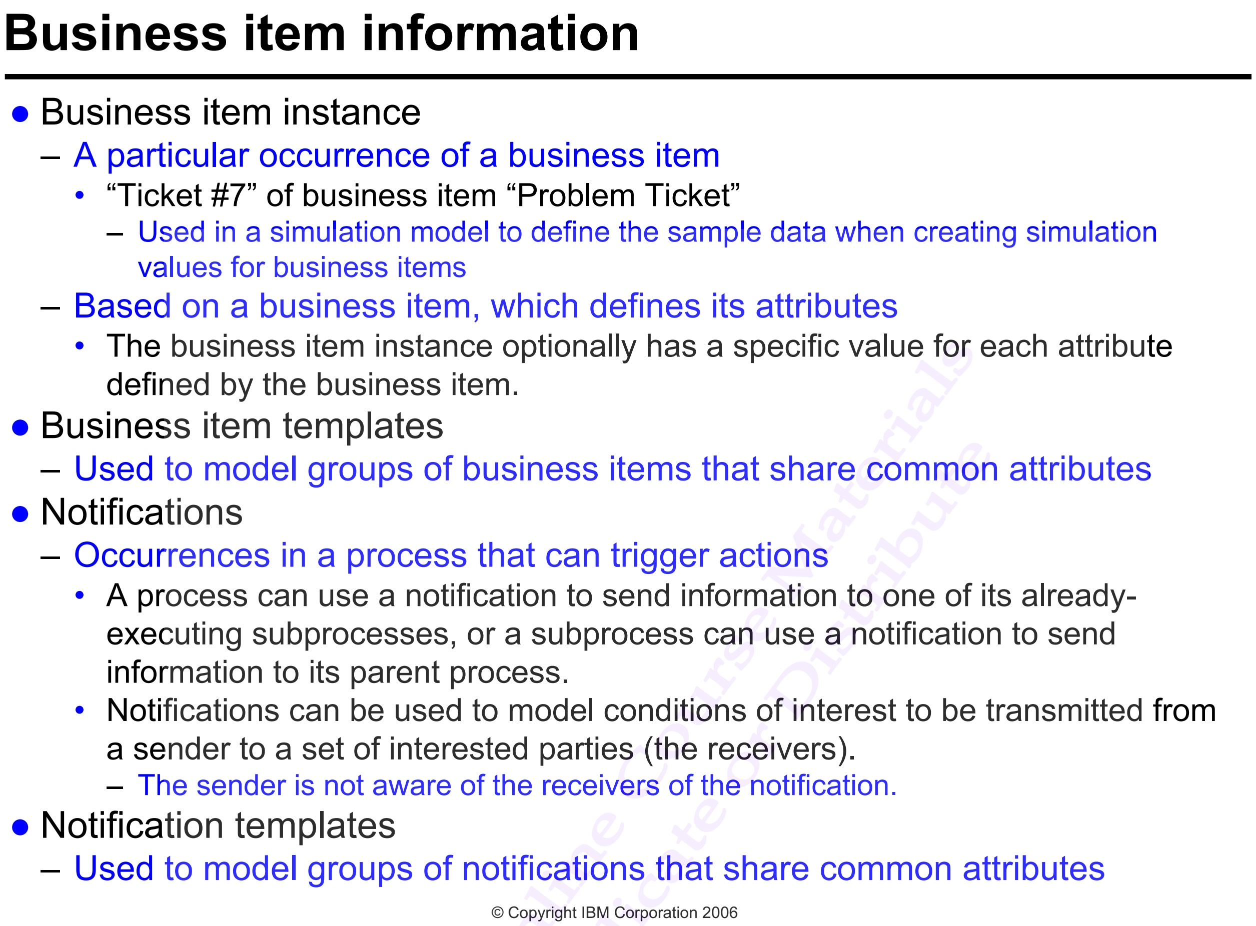


Figure 5-4. What is a business item? VB1841.0

Notes:



Business item information

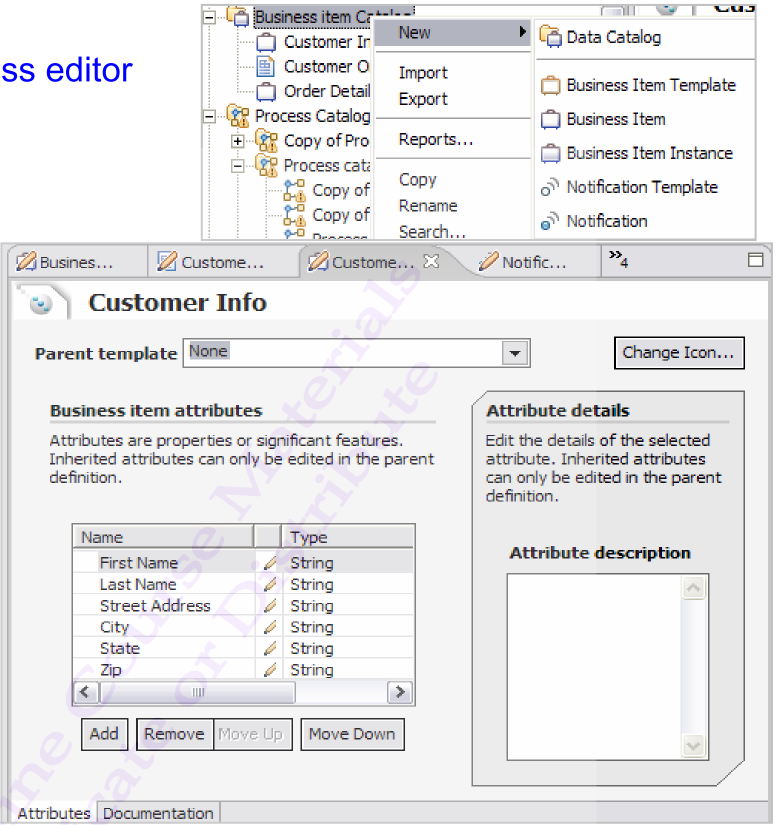
- Business item instance
  - A particular occurrence of a business item
    - “Ticket #7” of business item “Problem Ticket”
      - Used in a simulation model to define the sample data when creating simulation values for business items
  - Based on a business item, which defines its attributes
    - The business item instance optionally has a specific value for each attribute defined by the business item.
- Business item templates
  - Used to model groups of business items that share common attributes
- Notifications
  - Occurrences in a process that can trigger actions
    - A process can use a notification to send information to one of its already-executing subprocesses, or a subprocess can use a notification to send information to its parent process.
    - Notifications can be used to model conditions of interest to be transmitted from a sender to a set of interested parties (the receivers).
      - The sender is not aware of the receivers of the notification.
- Notification templates
  - Used to model groups of notifications that share common attributes

Figure 5-5. Business item information VB1841.0

Notes:

Adding business items

- Business item editor
  - Opens as tab in the process editor
- Attributes tab
  - Add one at a time
  - Based on a predefined template
- Attribute type can added
  - Basic
    - From list of data type
  - Complex
    - From list of predefined types
- Documentation tab
  - Additional documentation
  - Attachments
- Business item icon is selectable
- Notifications are similar



Customer Info

Parent template None

Business item attributes

Attributes are properties or significant features. Inherited attributes can only be edited in the parent definition.

Name	Type
First Name	String
Last Name	String
Street Address	String
City	String
State	String
Zip	String

Attribute details

Edit the details of the selected attribute. Inherited attributes can only be edited in the parent definition.

Attribute description

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Figure 5-6. Adding business items VB1841.0

Notes:

Business services and business service objects (1 of 2)

- Business services
  - Are model element representations of WSDL (Web Services Definition Language) files
- Business service objects
  - Are model element representations of XSD (XML schema) files
- Both types of files can be imported so that the information they contain can be added to the processes being modeled.
  - If the services and service objects have already been implemented, the WSDL or XSD definitions can be imported.
- When you export a process using the WebSphere Process Server export and the process refers to business services or business service objects, WebSphere Business Modeler also exports the WSDL and XSD files that were imported to create them.

Figure 5-7. Business services and business service objects (1 of 2) VB1841.0

Notes:

What is the IBM WebSphere Service Registry and Repository?

WebSphere Service Registry and Repository is a system for storing, accessing and managing information, commonly referred as service metadata, used in the selection, invocation, management, governance, and reuse of services in a successful SOA. In other words, it is where you store information about services in your systems, or in other organizations' systems, that you already use, plan to use, or want to be aware of. For example, an application can check the Registry and Repository just before invoking a service to locate the service instance best satisfying its functionality and performance needs. Registry and repository also play a role in other stages of the SOA life cycle. WebSphere's view of a registry and repository encompasses:

- A **service registry** that contains information about services, such as their interfaces, operations, and parameters
- A **metadata repository** providing a robust, extensible framework to suit the diverse nature of service usage

Business services and business service objects (2 of 2)

- WebSphere Business Modeler uses a separate set of catalogs for elements imported from WSDL and XSD files, despite their similarities to business items and services, because changing them would affect existing applications.
  - The business services and business service objects cannot be edited except in simulations.
  - In simulations costs, durations, interrupts, and resources can be added.
  - If a business service or business service object needs to be edited, the only way to do so is to modify the WSDL or XSD file and reimport it.

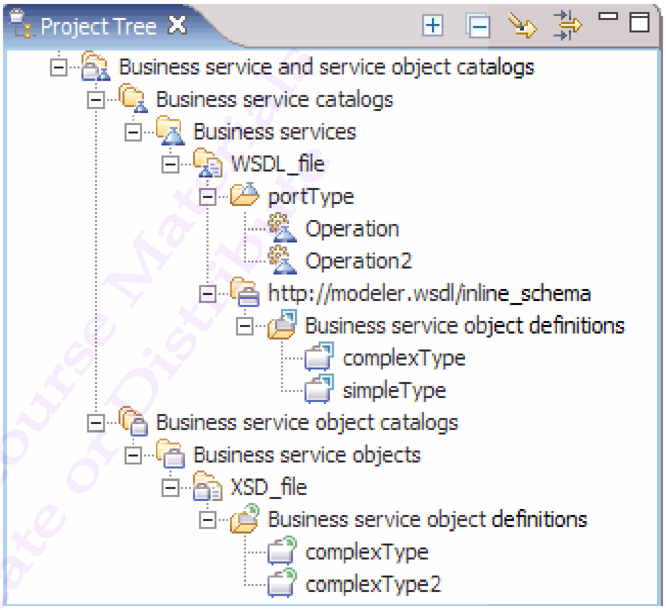
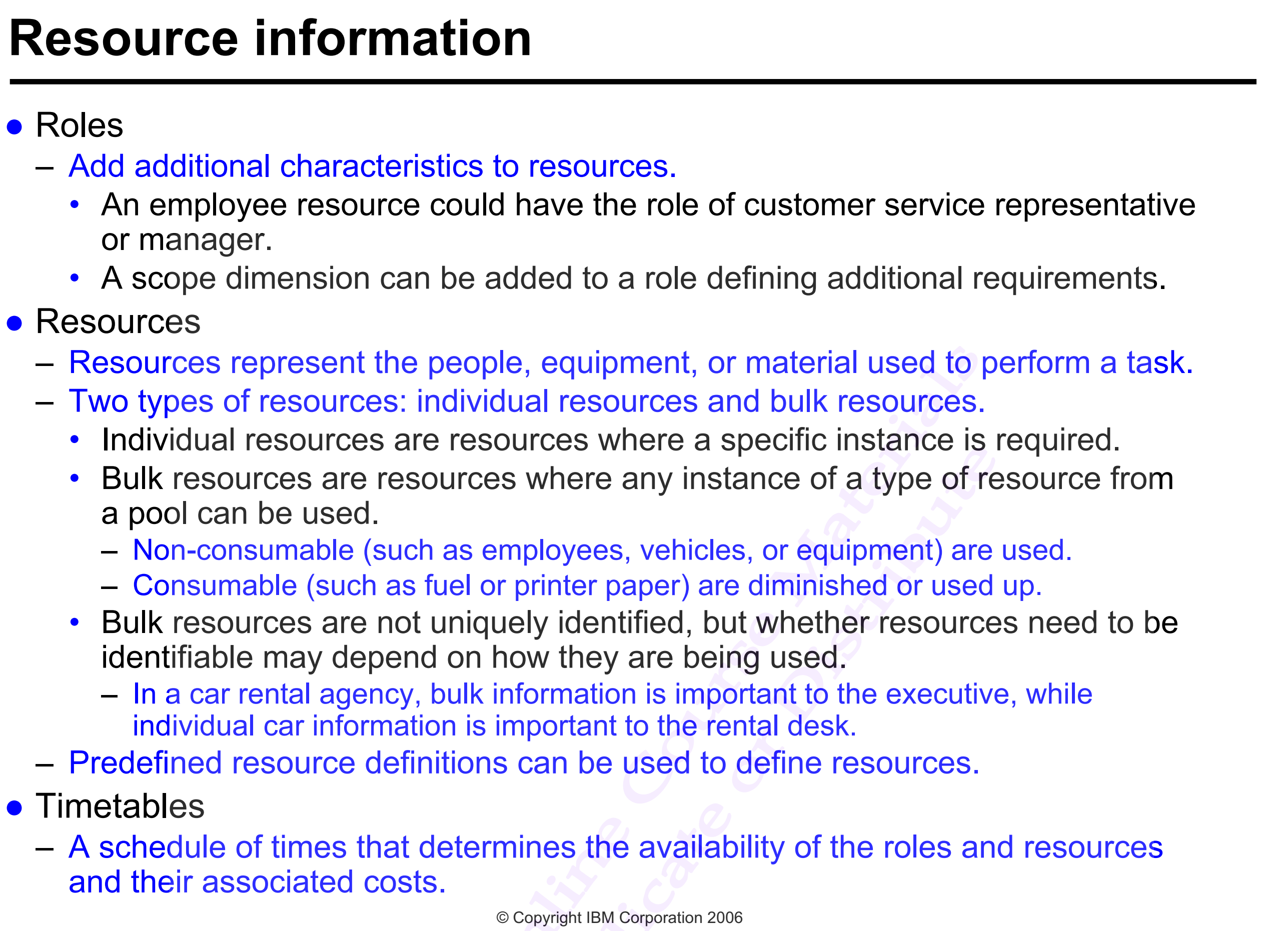

Project Tree
Business service and service object catalogs
Business service catalogs
Business services
WSDL_file
portType
Operation
Operation2
http://modeler.wsdl/inline_schema
Business service object definitions
complexType
simpleType
Business service object catalogs
Business service objects
XSD_file
Business service object definitions
complexType
complexType2

Figure 5-8. Business services and business service objects (2 of 2) VB1841.0

Notes:



Resource information

- Roles
  - Add additional characteristics to resources.
    - An employee resource could have the role of customer service representative or manager.
    - A scope dimension can be added to a role defining additional requirements.
- Resources
  - Resources represent the people, equipment, or material used to perform a task.
  - Two types of resources: individual resources and bulk resources.
    - Individual resources are resources where a specific instance is required.
    - Bulk resources are resources where any instance of a type of resource from a pool can be used.
      - Non-consumable (such as employees, vehicles, or equipment) are used.
      - Consumable (such as fuel or printer paper) are diminished or used up.
    - Bulk resources are not uniquely identified, but whether resources need to be identifiable may depend on how they are being used.
      - In a car rental agency, bulk information is important to the executive, while individual car information is important to the rental desk.
  - Predefined resource definitions can be used to define resources.
- Timetables
  - A schedule of times that determines the availability of the roles and resources and their associated costs.

Figure 5-9. Resource information VB1841.0

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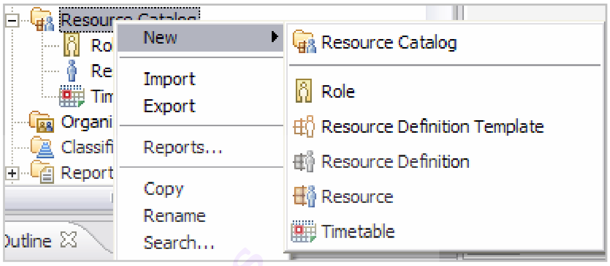
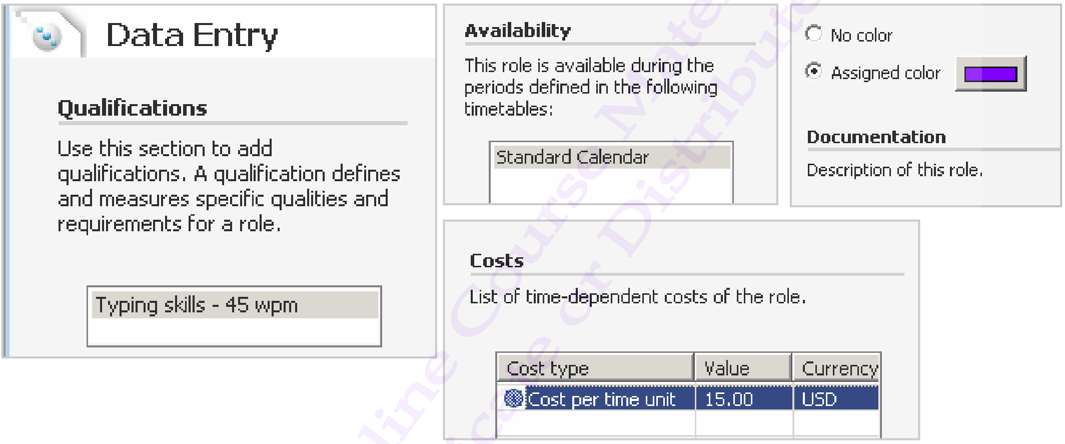
Notes:

Adding a role

- Roles
  - Defined and edited in Project Tree
- Role editor
  - Opens as a tab in the process editor
- Four tabs





Qualifications

Use this section to add qualifications. A qualification defines and measures specific qualities and requirements for a role.

Typing skills - 45 wpm

Availability

This role is available during the periods defined in the following timetables:

Standard Calendar

○ No color

● Assigned color

Documentation

Description of this role.

Costs

List of time-dependent costs of the role.

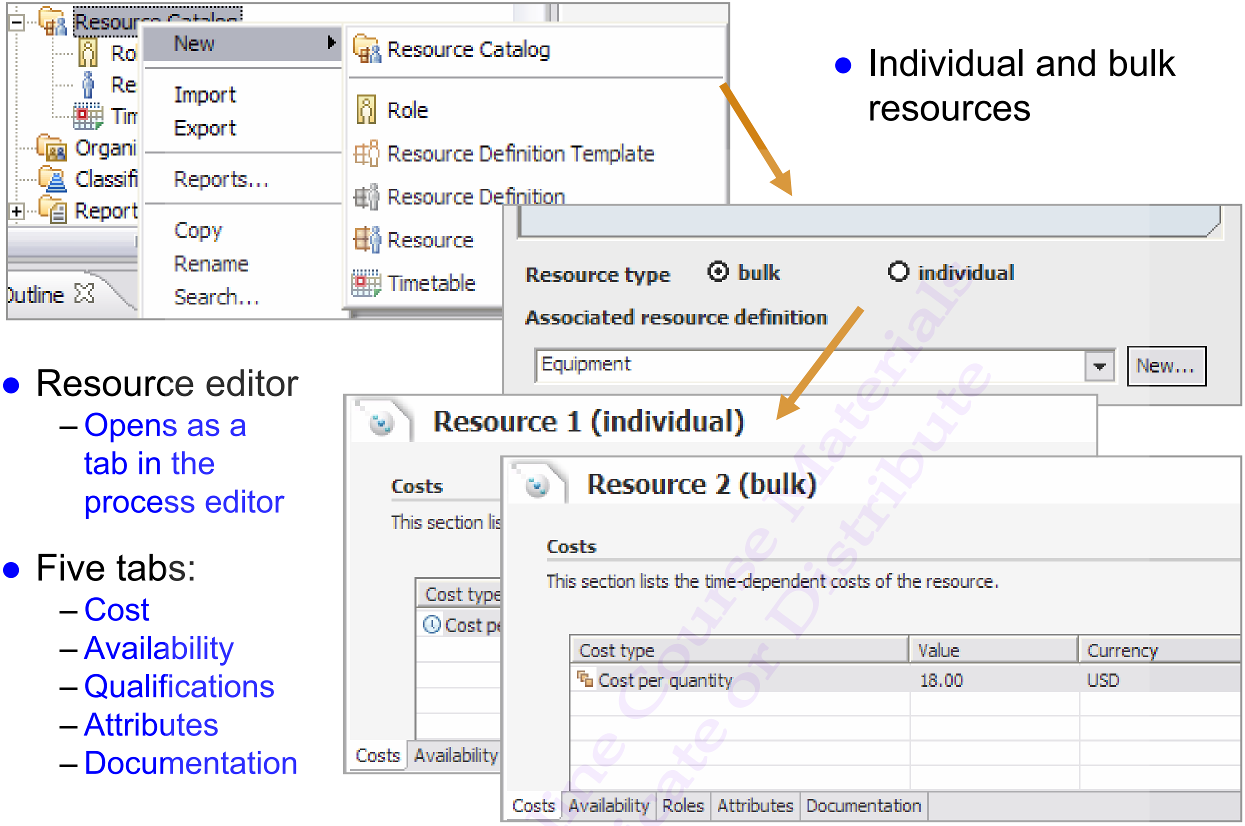
Cost type	Value	Currency
Cost per time unit	15.00	USD

Figure 5-10. Adding a role

VB1841.0

Notes:

Adding resources



Resource type ● bulk ○ individual

Associated resource definition: Equipment

Costs

This section lists the time-dependent costs of the resource.

Cost type	Value	Currency
Cost per quantity	18.00	USD

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- Individual and bulk resources
- Resource editor
  - Opens as a tab in the process editor
- Five tabs:
  - Cost
  - Availability
  - Qualifications
  - Attributes
  - Documentation

Figure 5-11. Adding resources VB1841.0

Notes:

There are individual and bulk resources.

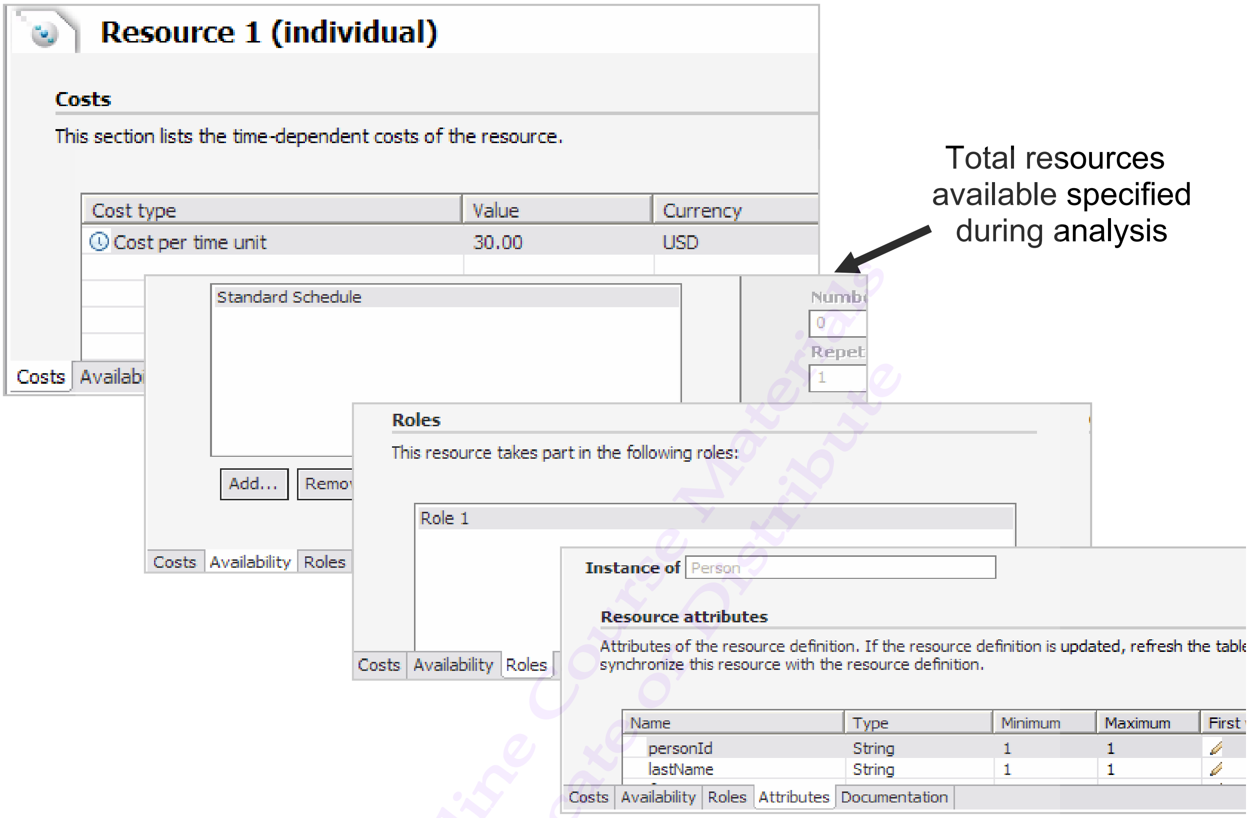
Resource editor:

- Opens as a tab in the process editor

Five tabs:

- Cost: the cost of using the resource
- Availability: when this resource is available
- Qualifications: roles this resource can perform
- Attributes: fields associated with a resource
- Documentation: additional documentation, attachments

Individual resource



Costs

This section lists the time-dependent costs of the resource.

Cost type	Value	Currency
Cost per time unit	30.00	USD

Roles

This resource takes part in the following roles:

Instance of Person

Resource attributes

Attributes of the resource definition. If the resource definition is updated, refresh the table
synchronize this resource with the resource definition.

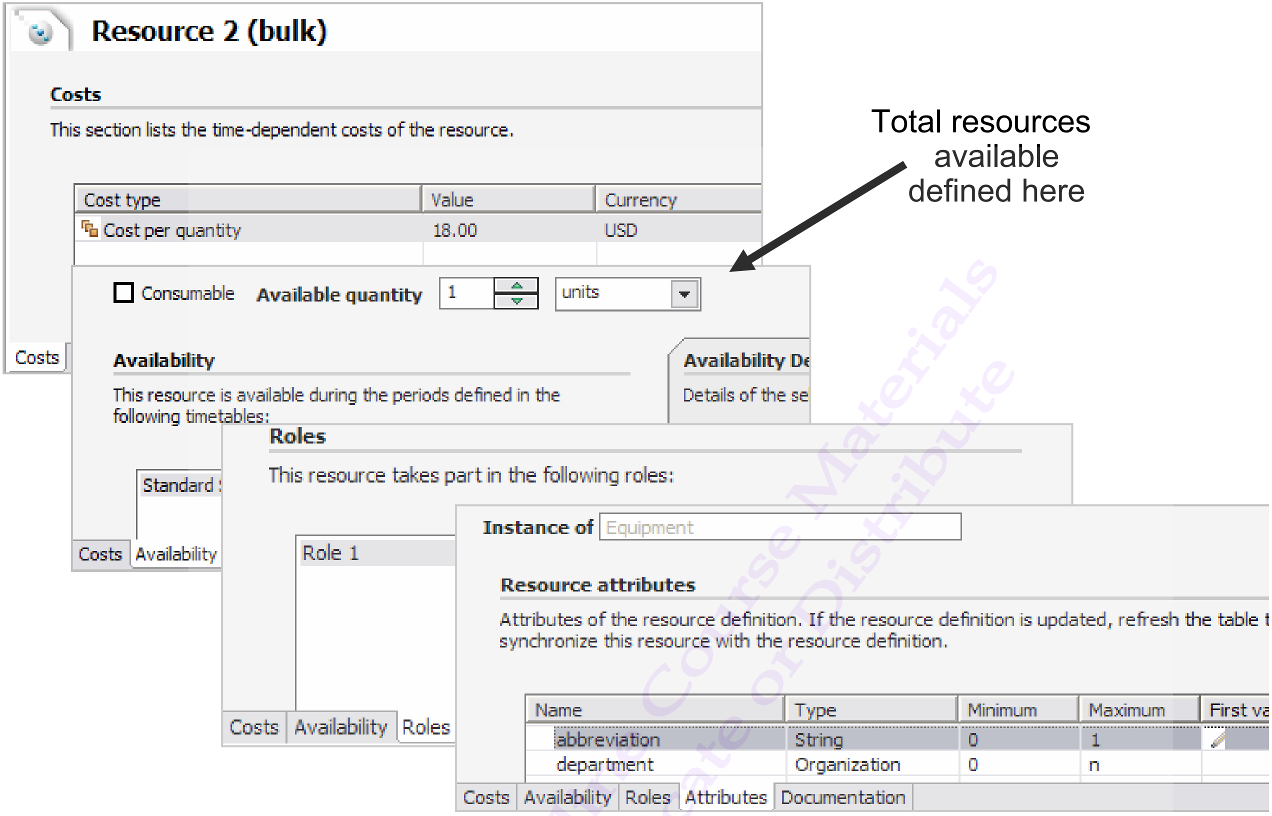
Name	Type	Minimum	Maximum	First
personId	String	1	1	✎
lastName	String	1	1	✎

Total resources available specified during analysis

Figure 5-12. Individual resource VB1841.0

Notes:

Bulk resources



Resource 2 (bulk)

Costs

This section lists the time-dependent costs of the resource.

Cost type	Value	Currency
Cost per quantity	18.00	USD

☐ Consumable **Available quantity** 1 units

Availability

This resource is available during the periods defined in the following timetables:

Availability De

Details of the se

Roles

This resource takes part in the following roles:

Role 1

Instance of Equipment

Resource attributes

Attributes of the resource definition. If the resource definition is updated, refresh the table t synchronize this resource with the resource definition.

Name	Type	Minimum	Maximum	First va
abbreviation	String	0	1	
department	Organization	0	n	

Total resources available defined here

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Figure 5-13. Bulk resources VB1841.0

Notes:

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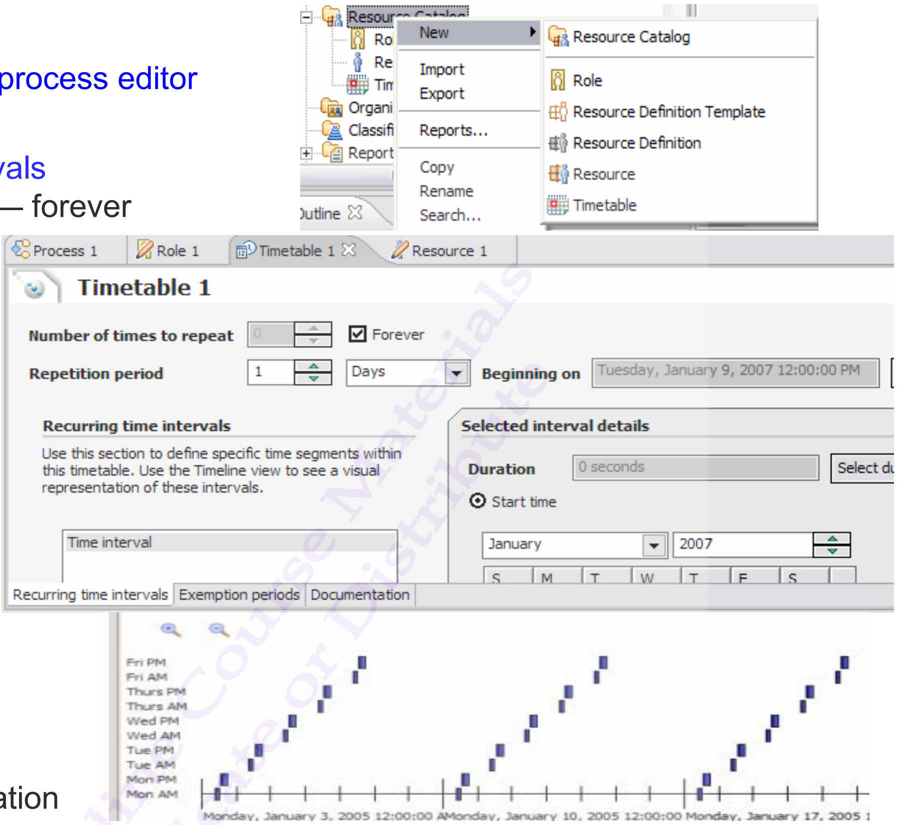
Adding a timetable

- Timetable editor
  - Opens as tab in the process editor
- Three tabs
  - Recurring time intervals
    - Times to repeat — forever
    - Repetition period
    - Beginning date and time
    - Recurring available intervals
  - Exemption periods
    - When timetable does not apply
  - Documentation
    - Additional documentation
    - Attachments
  - Attributes view
    - Visual representation



Timetable 1

Number of times to repeat 0 ☑ Forever

Repetition period 1 Days

Beginning on Tuesday, January 9, 2007 12:00:00 PM

Recurring time intervals

Use this section to define specific time segments within this timetable. Use the Timeline view to see a visual representation of these intervals.

Time interval

Selected interval details

Duration 0 seconds

● Start time

January 2007

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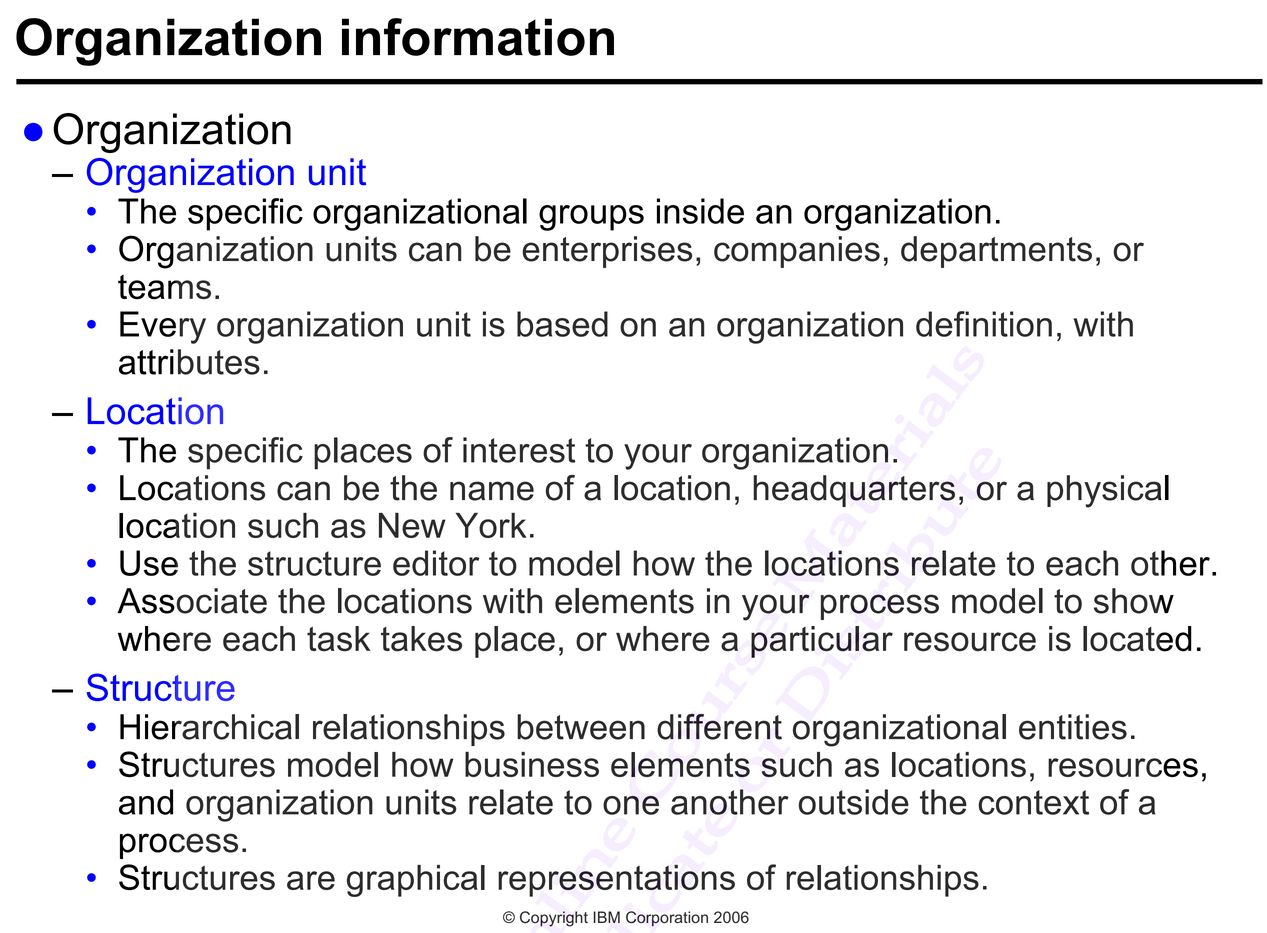
Figure 5-14. Adding a timetable VB1841.0

Self-Paced Only Course Materials
Do Not Duplicate or Distribute

Notes:



Organization information

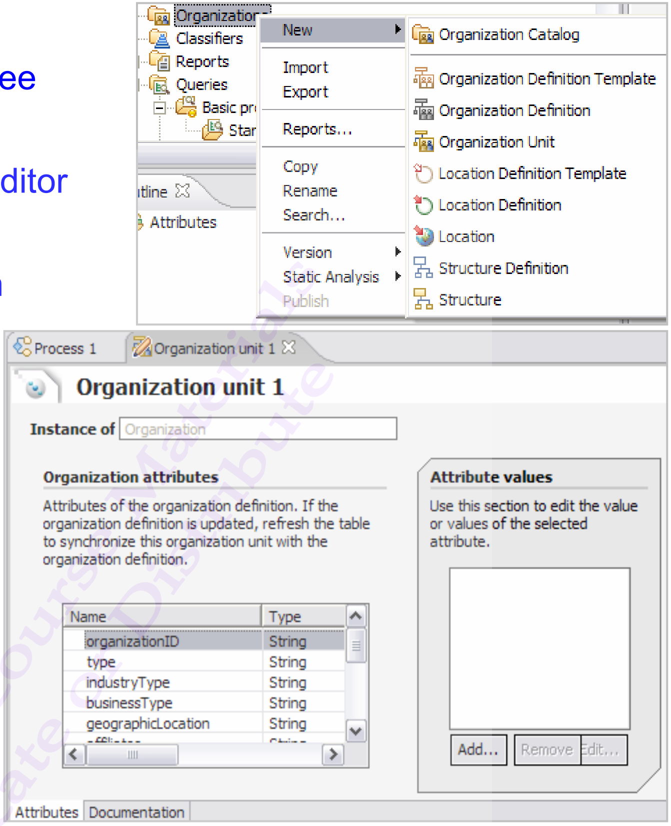
- Organization
  - Organization unit
    - The specific organizational groups inside an organization.
    - Organization units can be enterprises, companies, departments, or teams.
    - Every organization unit is based on an organization definition, with attributes.
  - Location
    - The specific places of interest to your organization.
    - Locations can be the name of a location, headquarters, or a physical location such as New York.
    - Use the structure editor to model how the locations relate to each other.
    - Associate the locations with elements in your process model to show where each task takes place, or where a particular resource is located.
  - Structure
    - Hierarchical relationships between different organizational entities.
    - Structures model how business elements such as locations, resources, and organization units relate to one another outside the context of a process.
    - Structures are graphical representations of relationships.

Figure 5-15. Organization information VB1841.0

Notes:

Adding an organization unit

- Organization units
  - Defined and edited in Project Tree
- Organization unit editor
  - Opens as a tab in the process editor
- Attributes tab
  - Based on organization definition
  - Create custom definitions
  - Use predefined definitions
  - Template can be created
- Attribute type can added
  - Basic
    - From list of data types
  - Complex
    - From list of predefined types
- Documentation tab
  - Additional documentation
  - Attachments



Organization unit 1

Instance of Organization

Organization attributes

Attributes of the organization definition. If the organization definition is updated, refresh the table to synchronize this organization unit with the organization definition.

Name	Type
organizationID	String
type	String
industryType	String
businessType	String
geographicLocation	String

Attribute values

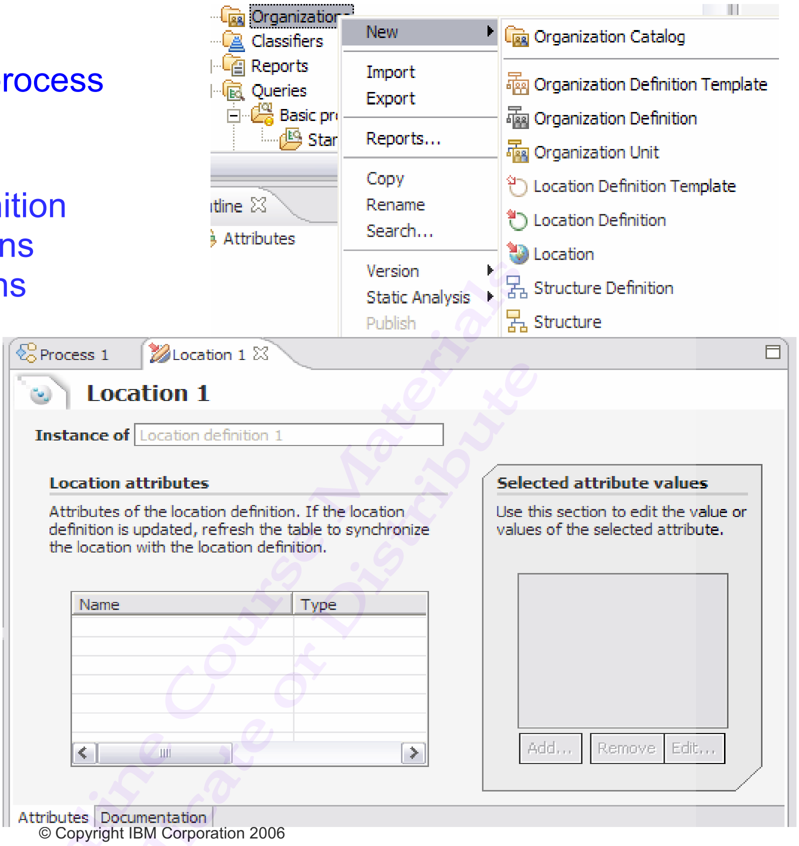
Use this section to edit the value or values of the selected attribute.

Figure 5-16. Adding an organization unit VB1841.0

Notes:

Adding a location

- Location editor
  - Opens as a tab in the process editor
- Attributes tab
  - Based on location definition
  - Create custom definitions
  - No predefined definitions
  - Template can be created
- Attribute type can added
  - Basic
    - From list of data types
  - Complex
    - From list of predefined types
- Documentation tab
  - Additional documentation
  - Attachments



Location 1

Instance of Location definition 1

Location attributes

Attributes of the location definition. If the location definition is updated, refresh the table to synchronize the location with the location definition.

Selected attribute values

Use this section to edit the value or values of the selected attribute.

Figure 5-17. Adding a location VB1841.0

Notes:

Adding structure

- Structure editor
  - Opens as tab in process editor
  - Similar to process editor
    - Graphical editor
- Diagram tab
  - Based on structure definition
  - Structure types
    - Organization units
    - Individual resources
    - Bulk resources
    - Locations
    - Categories
    - Business item instances
    - Roles
- Page layout
  - Setup for printing

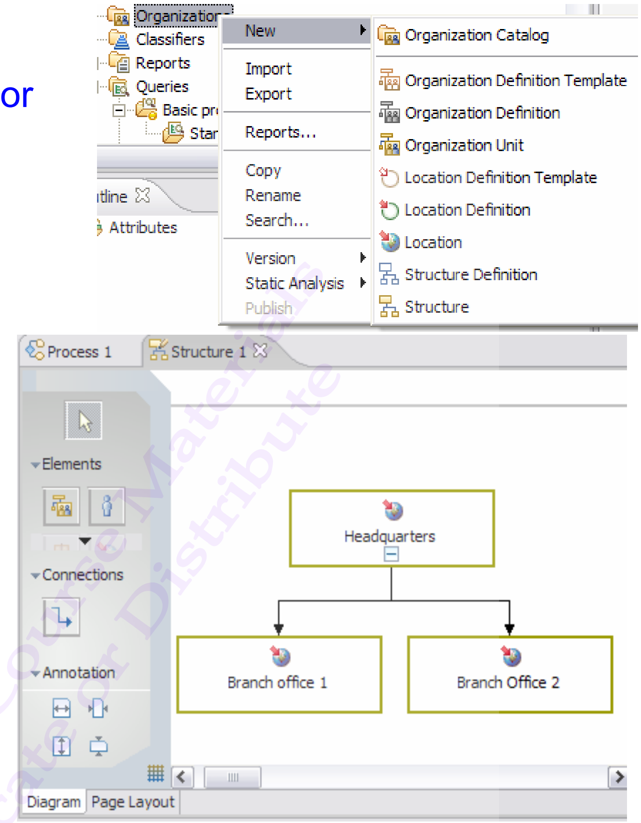


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Figure 5-18. Adding structure

VB1841.0

Notes:

What is a classifier?

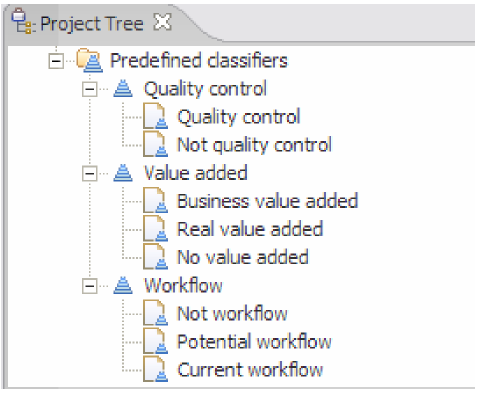
- Classifiers
  - Enable you to categorize tasks and other process elements for decision-making or process optimization
  - Can be shown on the diagram for visual analysis
  - Can be shown tables for numerical analysis
- Classifier values
  - Each classifier has a number of classifier values which can be assigned
- Predefined classifiers: quality control, value added, and workflow
- Custom classifiers can be added to focus the analysis
  - Functional area
    - Values: accounting, legal, administration, sales
  - Type of work
    - Values: manual, automated, semi-automated
  - Cause and effect (fishbone)
    - Values: machines, methods, materials, measurements, mother nature (environment), manpower (people)
- Multiple classifier values can be assigned to a specific element as long as each value belongs to a different classifier.

Figure 5-19. What is a classifier? VB1841.0

Notes:

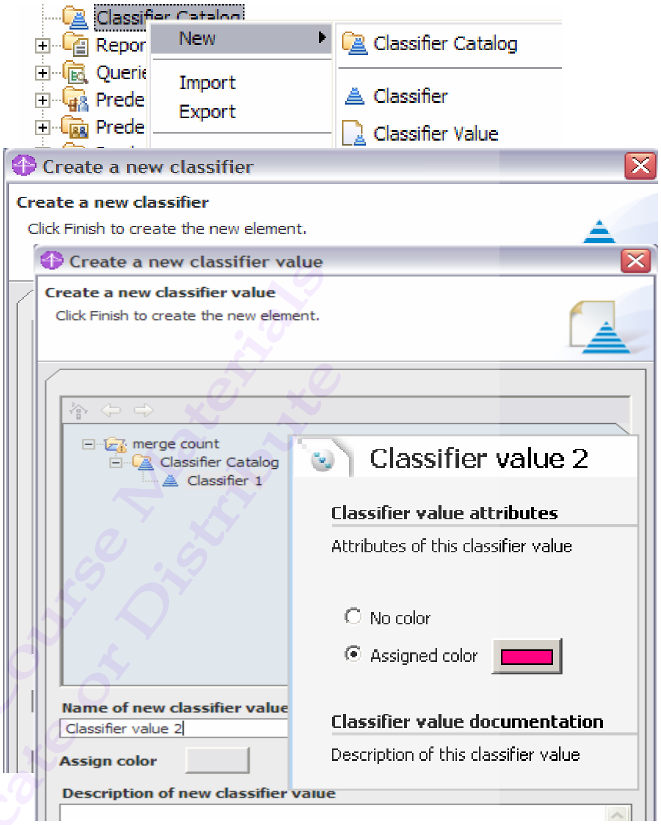
Adding classifier information

- Classifier editor
  - Pop-up window
- Classifier value editor
  - Opens as tab in the process editor
- Predefined classifiers



Project Tree

- Predefined classifiers
  - Quality control
    - Quality control
    - Not quality control
  - Value added
    - Business value added
    - Real value added
    - No value added
  - Workflow
    - Not workflow
    - Potential workflow
    - Current workflow



Create a new classifier

Create a new classifier

Click Finish to create the new element.

Create a new classifier value

Create a new classifier value

Click Finish to create the new element.

Name of new classifier value: Classifier value 2

Assign color

Description of new classifier value

Classifier value 2

Classifier value attributes

Attributes of this classifier value

○ No color

● Assigned color

Classifier value documentation

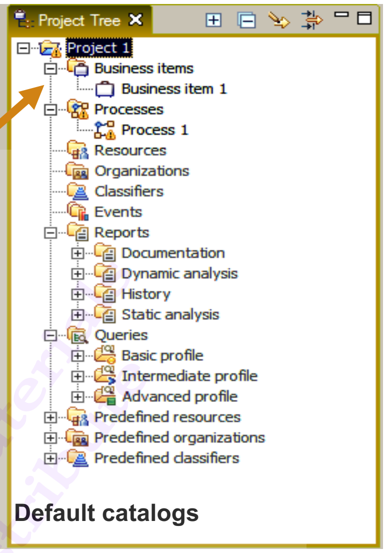
Description of this classifier value

Figure 5-20. Adding classifier information VB1841.0

Notes:

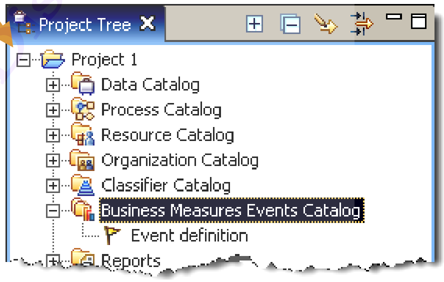
Organizing detailed model information

- Like items are grouped into catalogs for easy access.
- Each large catalog can be subdivided into lower level catalogs.
- Default catalogs are created:
  - (In this course, catalogs are renamed as shown in parentheses)
  - – Business items (Data Catalog)
  - – Processes (Process Catalog)
  - – Resources (Resource Catalog)
  - – Organizations (Organization Catalog)
  - – Classifiers (Classifier Catalog)
- Predefined catalogs
  - – Resources
  - – Organizations
  - – Classifiers



- Project 1
  - Business items
    - Business item 1
  - Processes
    - Process 1
  - Resources
  - Organizations
  - Classifiers
  - Events
  - Reports
    - Documentation
    - Dynamic analysis
    - History
    - Static analysis
  - Queries
    - Basic profile
    - Intermediate profile
    - Advanced profile
  - Predefined resources
  - Predefined organizations
  - Predefined classifiers

Default catalogs

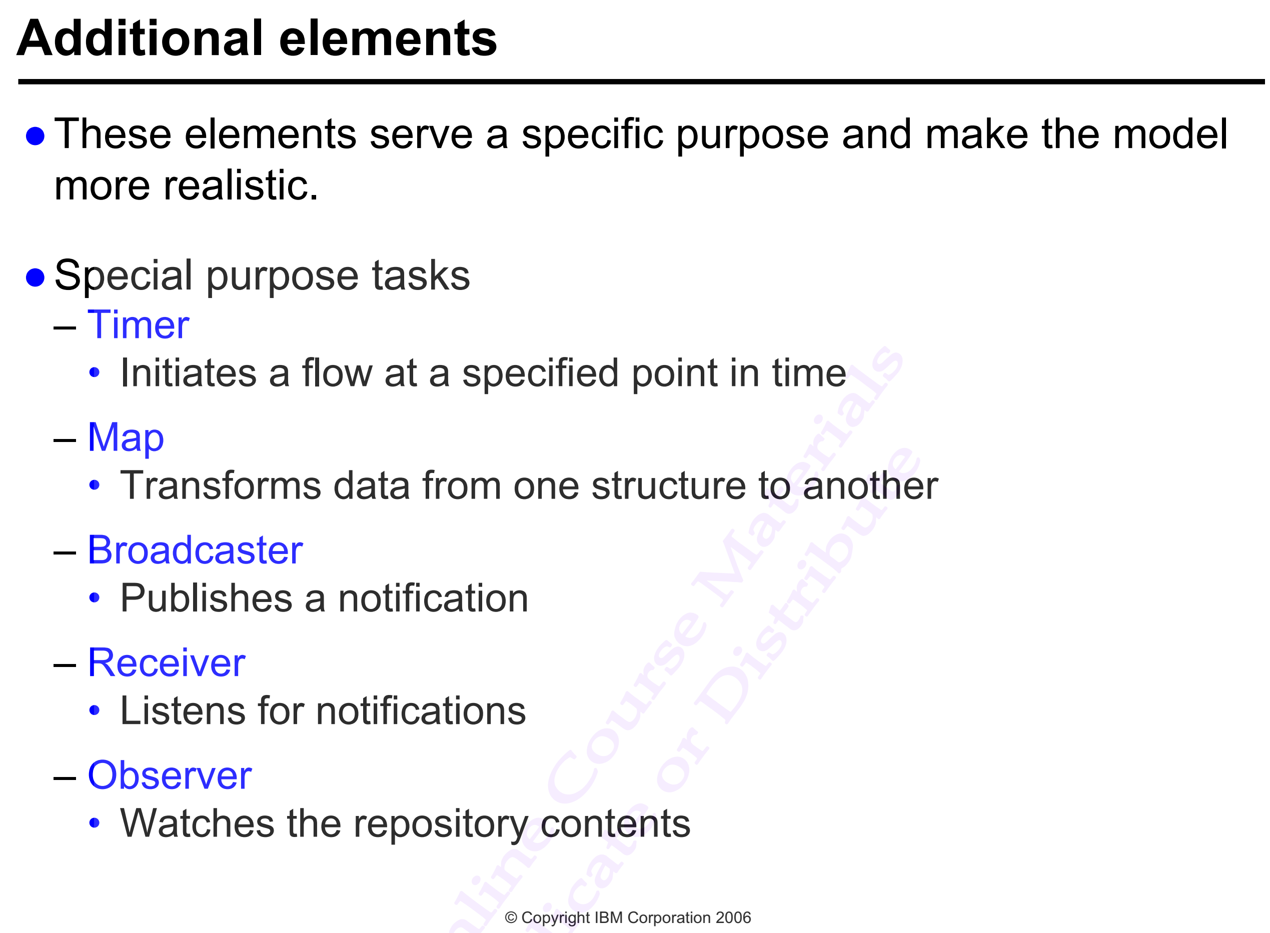


- Project 1
  - Data Catalog
  - Process Catalog
  - Resource Catalog
  - Organization Catalog
  - Classifier Catalog
  - Business Measures Events Catalog
    - Event definition
  - Reports

Renamed catalogs

Figure 5-21. Organizing detailed model information VB1841.0

Notes:



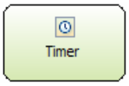
Additional elements

- These elements serve a specific purpose and make the model more realistic.
- Special purpose tasks
  - Timer
    - Initiates a flow at a specified point in time
  - Map
    - Transforms data from one structure to another
  - Broadcaster
    - Publishes a notification
  - Receiver
    - Listens for notifications
  - Observer
    - Watches the repository contents

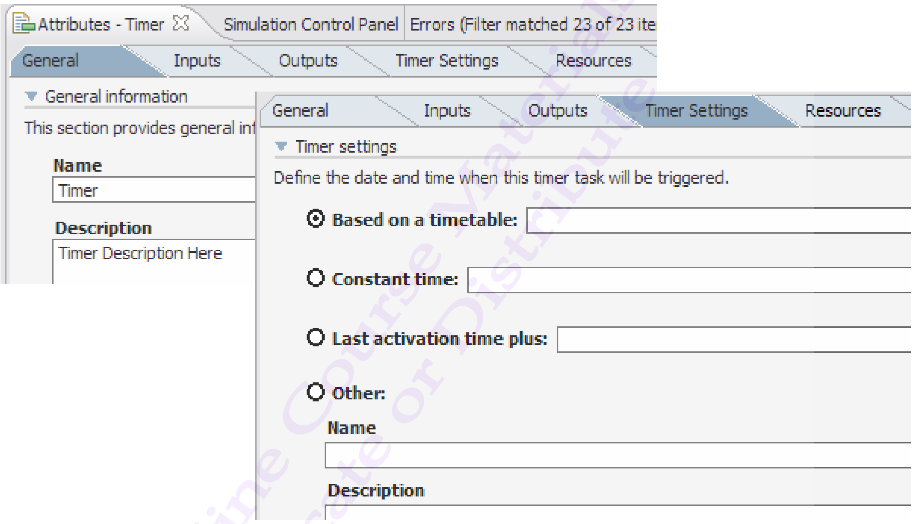
Figure 5-22. Additional elements VB1841.0

Notes:

Timer



- A specialized task that initiates a flow at a specified point in time
- Two kinds of timers:
  - A timer that goes off once
    - It goes off at a specific date and time and then terminates.
    - It goes off after a specified amount of time and then terminates.
  - A timer that goes off at regular time intervals
    - It goes off at specified intervals on a scheduled basis.
    - This timer is associated with a timetable that has recurring times.



General information

This section provides general inf

Name

Timer

Description

Timer Description Here

Timer settings

Define the date and time when this timer task will be triggered.

● **Based on a timetable:**

○ **Constant time:**

○ **Last activation time plus:**

○ **Other:**

Name

Description

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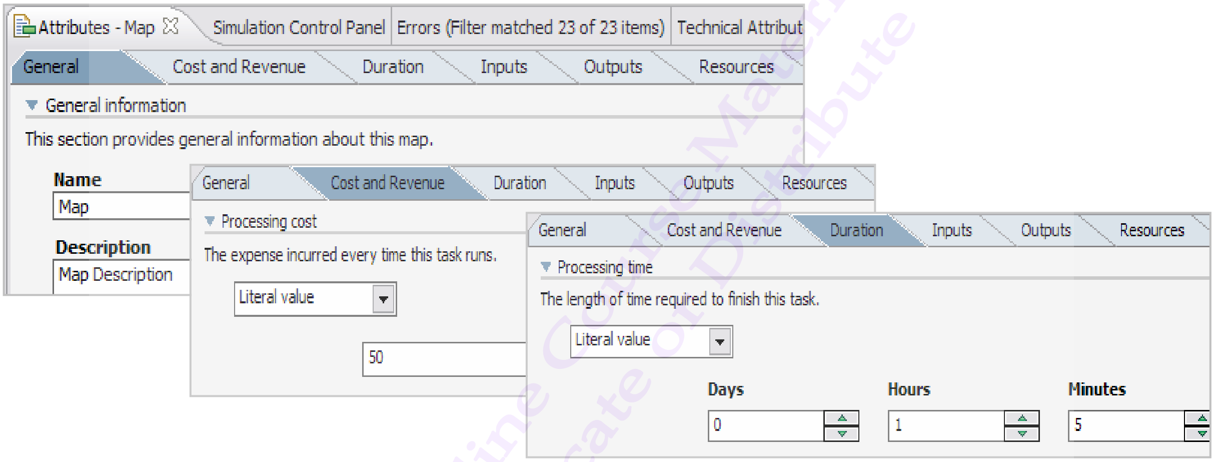
Figure 5-23. Timer

VB1841.0

Notes:

Map

- A specialized task that transforms data from one structure to another
  - A map specifies how to transform an input into output
  - Provides the same functionality as a local task
    - Provided only for diagramming purposes
- Example
  - A map could be used to represent an automated task that creates a procurement order.
    - The map (task) takes a list of requested items and a due date as input, and produces an order as output.
    - The order contains a new order number, the list of requested items, the current date.



This section provides general information about this map.

Name Map

Description Map Description

The expense incurred every time this task runs.

Literal value

50

The length of time required to finish this task.

Literal value

Days 0 **Hours** 1 **Minutes** 5

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Figure 5-24. Map VB1841.0

Notes:

A map is a specialized task that transforms data from one structure to another.

A map specifies how to transform an input into output.

- Provides the same functionality as a local task
- Provided only for diagramming purposes

Example:

- A map could be used to represent an automated task that creates a procurement order.
- The map (task) takes a list of requested items and a due date as input, and produces an order as output.
- The order contains a new order number, the list of requested items, and the current date.

For example, you might have an automated task that creates a procurement order. You could use a map as the "Create procurement order" task. This task takes a list of requested items and a due date as input, and produces an order as output. The order contains a new order number, the list of requested items, the current date, and a due date if one was provided as input. It also marks the order urgent if the due date is less than seven days away from the current date.

Notification broadcasters and receivers

- Specialized tasks that enable communication while a process is running:
  - A notification broadcaster publishes notifications.
  - A notification receiver listens for notifications and produces output.
- Sends information between executing processes:
  - A process can use a notification to send information to one of its already-executing subprocesses.
  - A subprocess can use a notification to send information to its parent process.
- Notifications allow information to be transmitted from and to multiple parties without having to explicitly draw connections between the senders of the information (the broadcasters) and the receivers of the information (the receivers).
- A notification is received by any notification receiver within its scope (specified subprocesses) that is listening for that notification.
  - There is at least one receiver for each broadcaster.
  - Usually there will be one broadcaster and several receivers.
  - Or several broadcasters (sending the same notification) and several receivers.

Figure 5-25. Notification broadcasters and receivers VB1841.0

Notes:

Example:

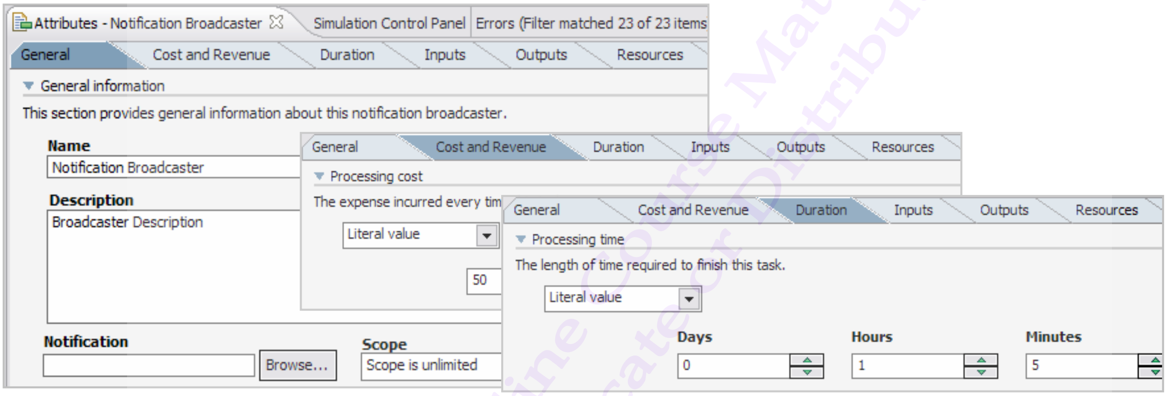
A task might cause a notification to be broadcast when it has run out of items to process.

This type of notification would probably have a timestamp attribute to keep track of the time when it finishes its work.

Depending on what elements you have set, another task can receive the notification and take action, passing on more work to the first task, or perhaps causing the process to end.

Notification broadcaster

- A specialized task that publishes a notification
  - When broadcast, any notification receiver within its scope receives it.
  - Having a receiver within your process is not sufficient unless that receiver is listening.
    - Ensure that the notification receiver starts before the notification broadcaster.
- A notification broadcaster is associated with a previously defined notification.
  - A scope can be set for a notification. If no scope is set, it is unlimited.
    - No scope means the notification is received by any notification receiver in any process that contains the process where the notification broadcaster is located.
    - A scope can be set so notification is received only by notification receivers in the local process or subprocess.



General information

This section provides general information about this notification broadcaster.

Name: Notification Broadcaster

Description: Broadcaster Description

Notification:

Scope: Scope is unlimited

Processing cost

The expense incurred every tim

Literal value

50

Processing time

The length of time required to finish this task.

Literal value

Days	Hours	Minutes
0	1	5

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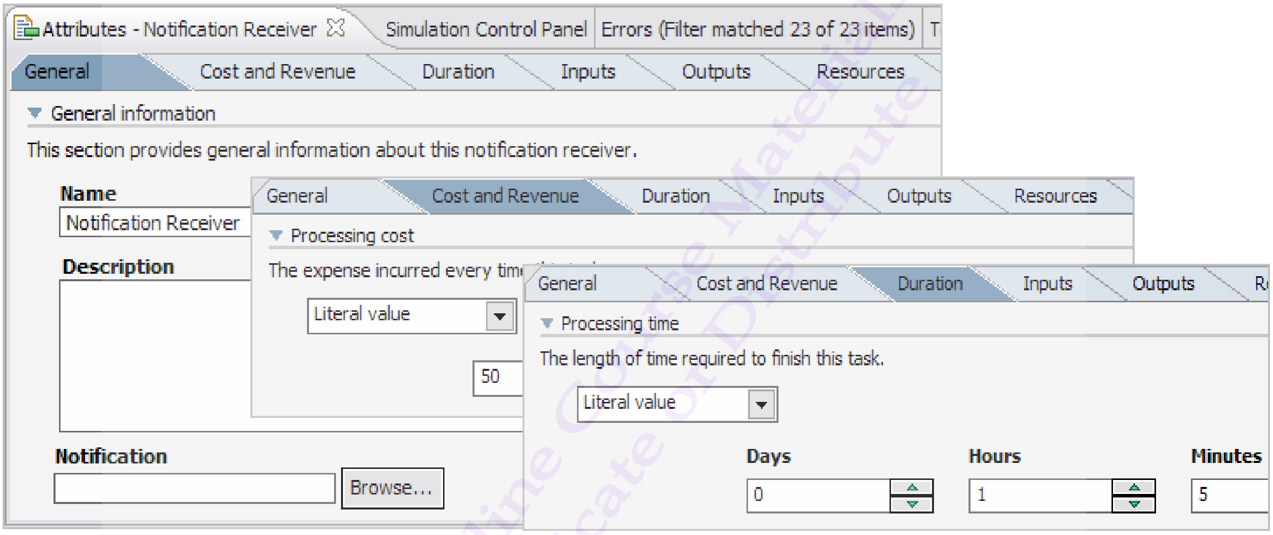
Figure 5-26. Notification broadcaster

VB1841.0

Notes:

Notification receiver

- A specialized task that listens for and receives notifications
  - After receiving a notification, the receiver produces an output.
- A notification receiver starts listening for notifications when it is triggered by a task or other element.
- Notifications received can be restricted by setting conditions on the receiver.
  - The condition can check the value of an attribute in the notification.



General information

This section provides general information about this notification receiver.

Name: Notification Receiver

Description

Notification

Processing cost

The expense incurred every tim

Literal value

50

Processing time

The length of time required to finish this task.

Literal value

Days: 0

Hours: 1

Minutes: 5

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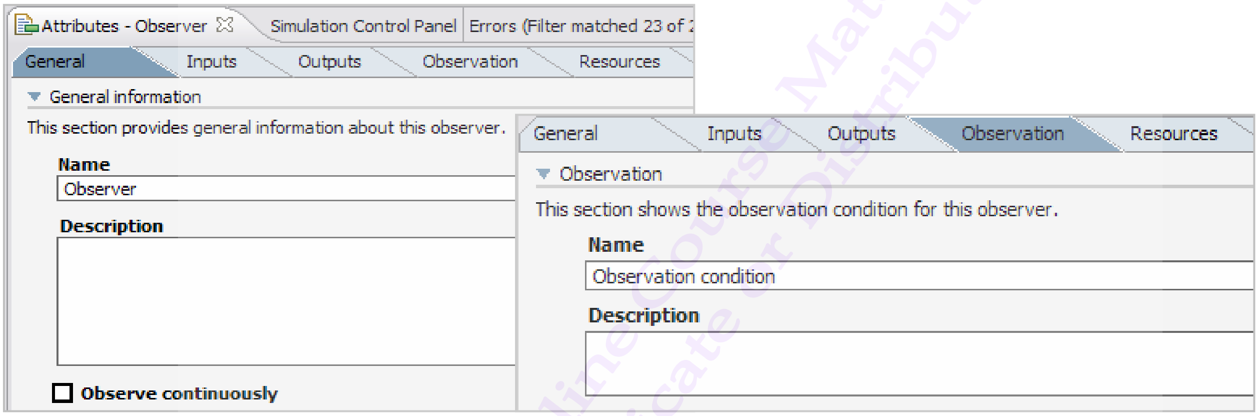
Figure 5-27. Notification receiver VB1841.0

Notes:

Observer

- A specialized task that watches a process and its associated repositories
  - Initiates a flow when a certain condition becomes true
    - An observer can start a flow when a repository exceeds a threshold value.
- Two kinds of observers:
  - An observer that initiates a flow once
    - It starts a flow when a repository is full and then terminates.
  - An observer that initiates a flow every time a specific condition occurs
    - It starts a flow each time an item out of stock task is reached.
      - Observe continuously is selected
- The observer is only responsible for observing the condition and producing an output when the condition is satisfied.
  - It cannot produce data and does no other work.



General information

This section provides general information about this observer.

Name
Observer

Description

☐ **Observe continuously**

Observation

This section shows the observation condition for this observer.

Name
Observation condition

Description

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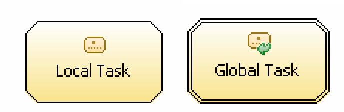
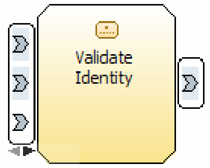
Figure 5-28. Observer VB1841.0

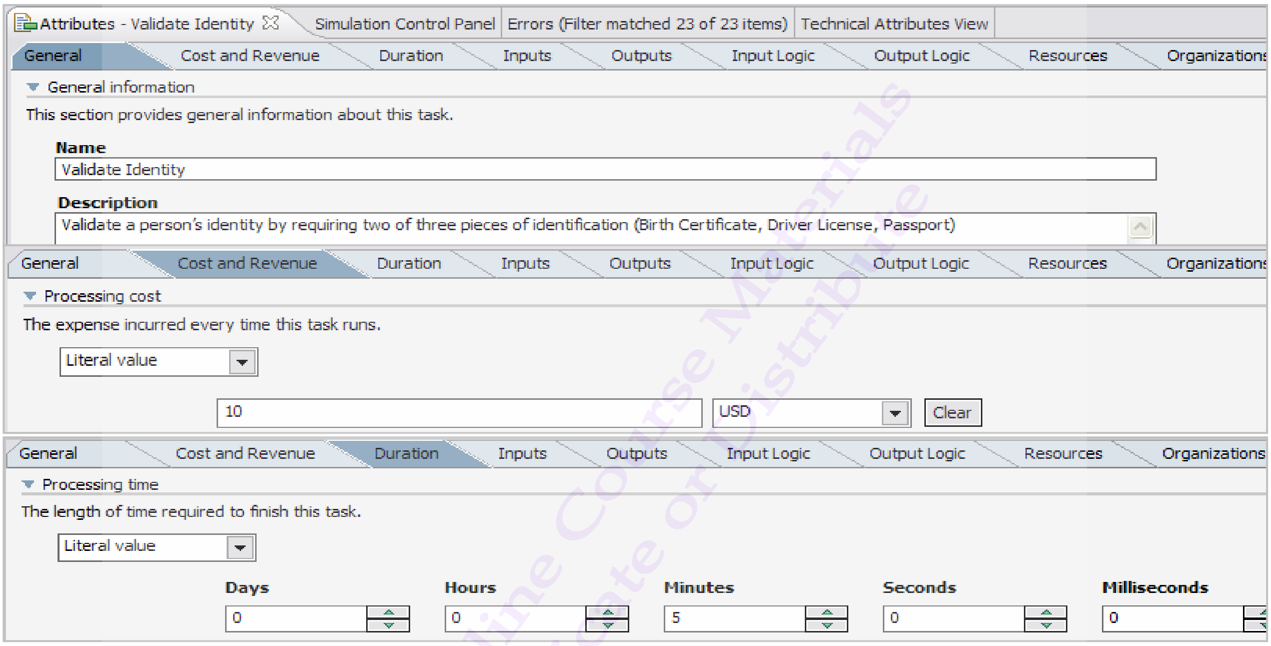
Notes:

Task — detailed attributes (1 of 6)



- Detailed attributes complete the definition of the task
- Will use a local task example to explain attributes
  - Example — validating a person's identity
- General, Cost and Revenue, and Duration tabs





General information

This section provides general information about this task.

Name
Validate Identity

Description
Validate a person's identity by requiring two of three pieces of identification (Birth Certificate, Driver License, Passport)

Processing cost

The expense incurred every time this task runs.

Literal value

10 USD Clear

Processing time

The length of time required to finish this task.

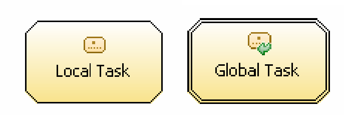
Literal value

Days	**Hours**	**Minutes**	**Seconds**	**Milliseconds**
0	0	5	0	0

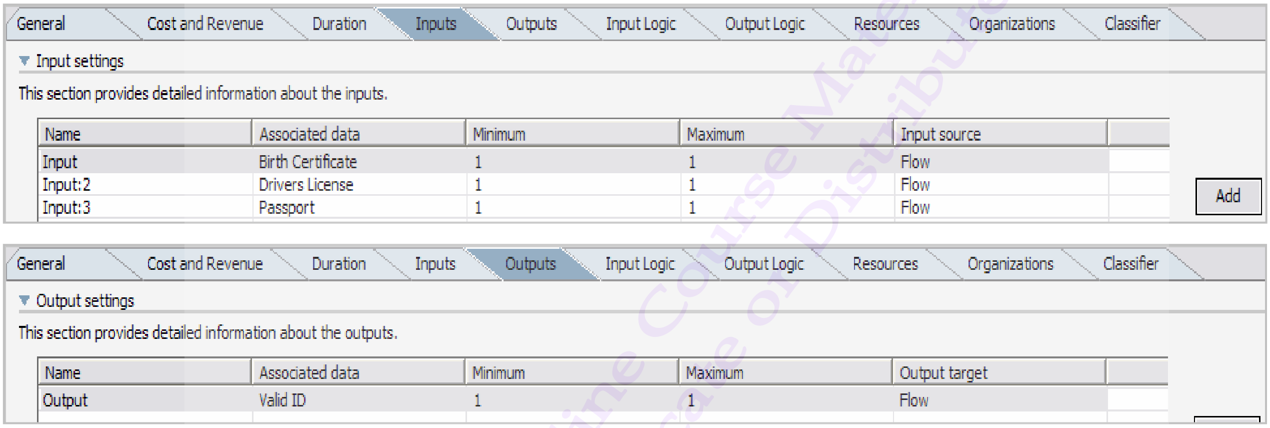
Figure 5-29. Task — detailed attributes (1 of 6) VB1841.0

Notes:

Task — detailed attributes (2 of 6)



- Inputs
  - Name
    - Can be changed to make it more meaningful if business item name is not clear
  - Associated data
    - Business item associated with the input
  - Minimum and maximum
    - The number of business items required to execute the task
  - Input source
    - Flow or repository
- Outputs
  - Minimum and maximum
    - The number of business items created by the task
  - Output target
    - Flow or repository



Input settings

This section provides detailed information about the inputs.

Name	Associated data	Minimum	Maximum	Input source
Input	Birth Certificate	1	1	Flow
Input:2	Drivers License	1	1	Flow
Input:3	Passport	1	1	Flow

Output settings

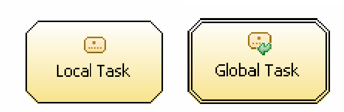
This section provides detailed information about the outputs.

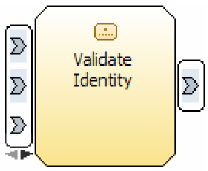
Name	Associated data	Minimum	Maximum	Output target
Output	Valid ID	1	1	Flow

Figure 5-30. Task — detailed attributes (2 of 6) VB1841.0

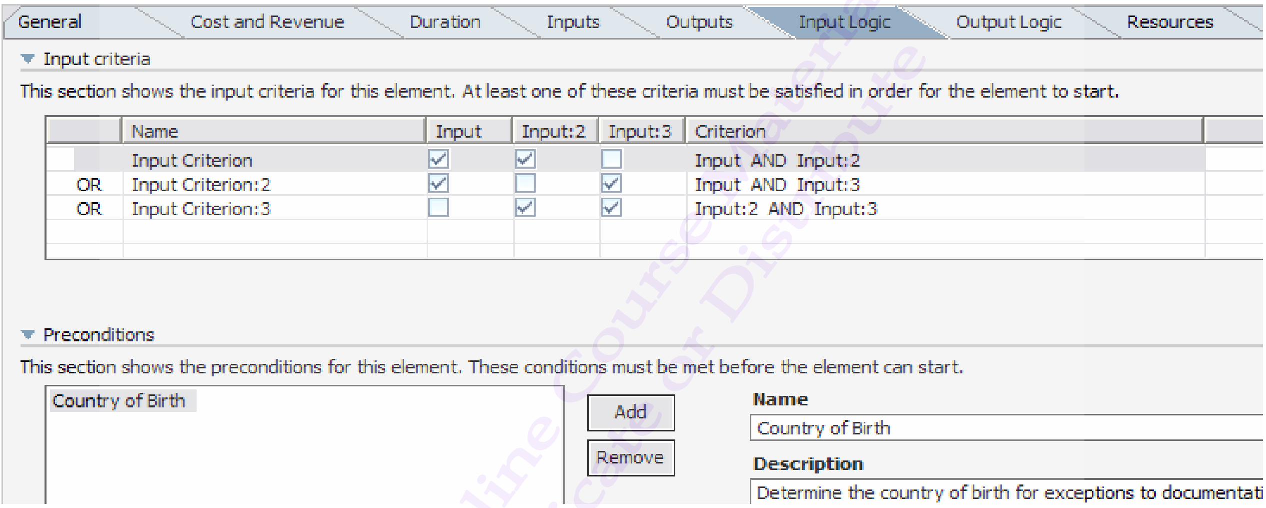
Notes:

Task — detailed attributes (3 of 6)





- Input logic
  - Input criteria
    - Specifies the combination of business items needed for the task to start.
    - Default is “AND” logic; all business items are required.
    - “OR” logic is represented by adding separate rows for each criterion.
    - Complex logic is represented by a small two-headed arrow below the inputs.
  - Preconditions
    - Specifics the values of the business item attributes needed for the task to start.
    - Each condition is named and described.
    - An expression is created to specify how each condition is to be evaluated.



This section shows the input criteria for this element. At least one of these criteria must be satisfied in order for the element to start.

	Name	Input	Input:2	Input:3	Criterion
	Input Criterion	☑	☑	☐	Input AND Input:2
OR	Input Criterion:2	☑	☐	☑	Input AND Input:3
OR	Input Criterion:3	☐	☑	☑	Input:2 AND Input:3

This section shows the preconditions for this element. These conditions must be met before the element can start.

Country of Birth

Name
Country of Birth

Description
Determine the country of birth for exceptions to documentati

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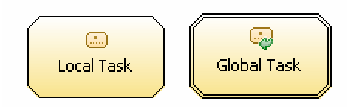
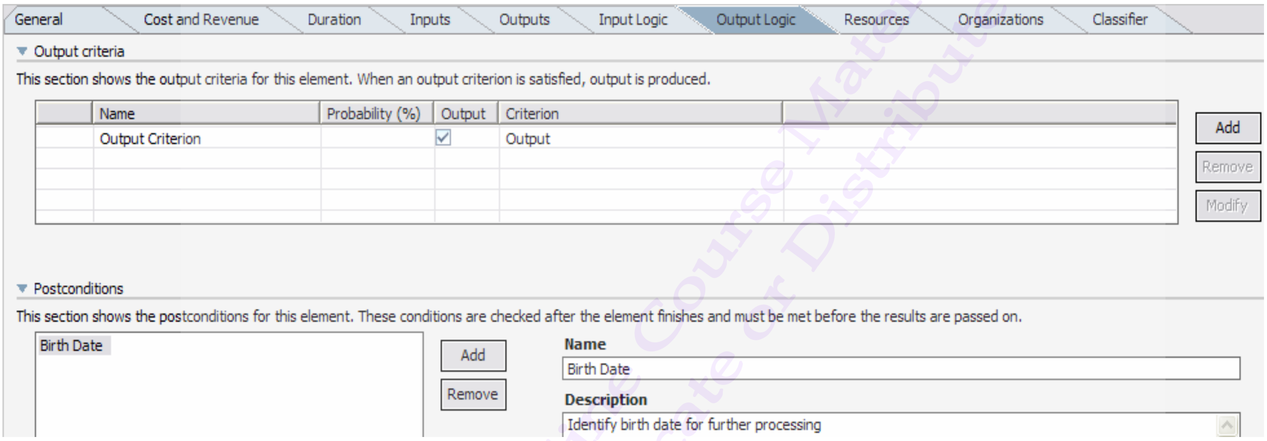
Figure 5-31. Task — detailed attributes (3 of 6) VB1841.0

Notes:

Task — detailed attributes (4 of 6)



- Output logic
  - Output criteria
    - Specifies the combination of business items needed for the task to complete.
    - Default is “AND” logic; all business items are required.
    - “OR” logic is represented by adding separate rows for each criterion.
    - Complex logic is represented by a small two-headed arrow below the outputs.
  - Preconditions
    - Specifics the values of the business item attributes needed for the task to complete.
    - Each condition is named and described.
    - An expression is created to specify how each condition is to be evaluated.



Output criteria

This section shows the output criteria for this element. When an output criterion is satisfied, output is produced.

	Name	Probability (%)	Output	Criterion
	Output Criterion		☑	Output

Postconditions

This section shows the postconditions for this element. These conditions are checked after the element finishes and must be met before the results are passed on.

Birth Date

Name: Birth Date

Description: Identify birth date for further processing

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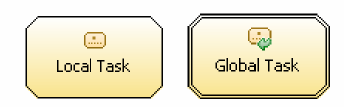
Figure 5-32. Task — detailed attributes (4 of 6)

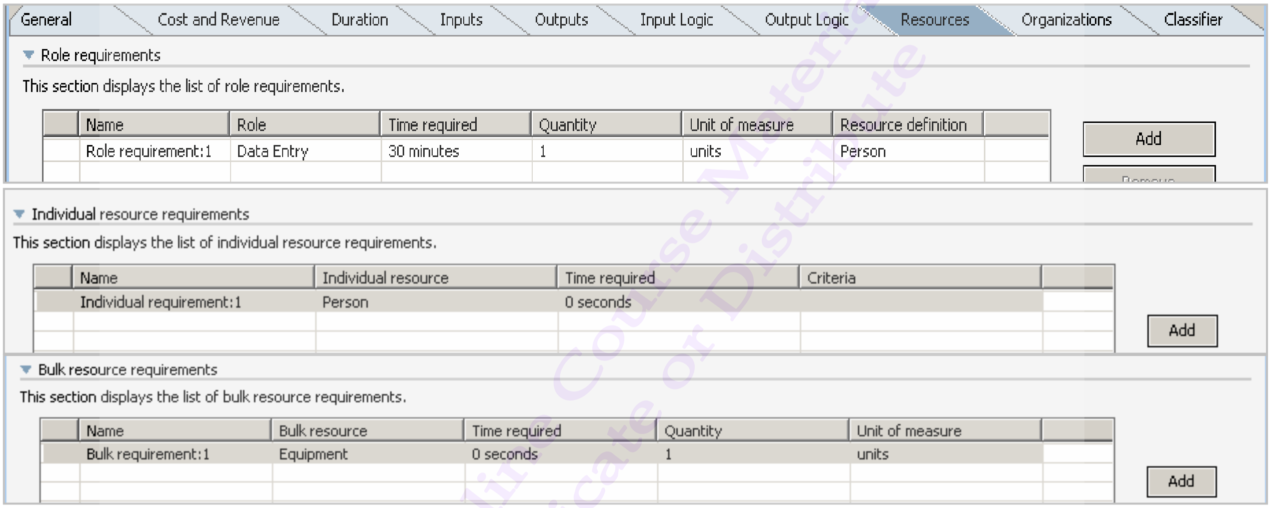
VB1841.0

Notes:

Task — detailed attributes (5 of 6)



- Resources
  - Role requirements — the role or roles required to complete the task
  - Individual resource requirements — the specific individual resources required to complete the task
  - Bulk resource requirements — the bulk resources required to complete the task
- Time required
  - The time the resource requires to complete the work for the task
    - May be different for each resource and different from the task duration
- Quantity
  - The number of resources needed to complete the specific task, not those available



Role requirements

This section displays the list of role requirements.

Name	Role	Time required	Quantity	Unit of measure	Resource definition
Role requirement:1	Data Entry	30 minutes	1	units	Person

Individual resource requirements

This section displays the list of individual resource requirements.

Name	Individual resource	Time required	Criteria
Individual requirement:1	Person	0 seconds	

Bulk resource requirements

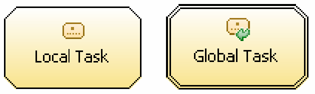
This section displays the list of bulk resource requirements.

Name	Bulk resource	Time required	Quantity	Unit of measure
Bulk requirement:1	Equipment	0 seconds	1	units

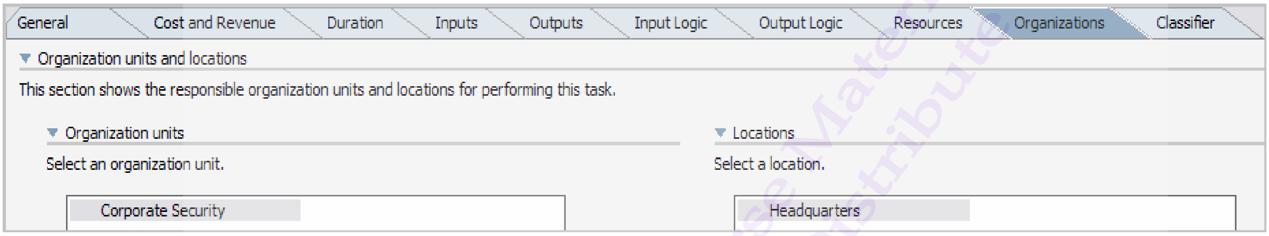
Figure 5-33. Task — detailed attributes (5 of 6) VB1841.0

Notes:

Task — detailed attributes (6 of 6)



- Organizations
  - Organization units
    - Organization units responsible for this task
  - Locations
    - Locations responsible for this task
- Classifier
  - Classifier
    - Multiple classifiers per task
  - Classifier value
    - One classifier value per classifier



Organization units and locations

This section shows the responsible organization units and locations for performing this task.

Organization units

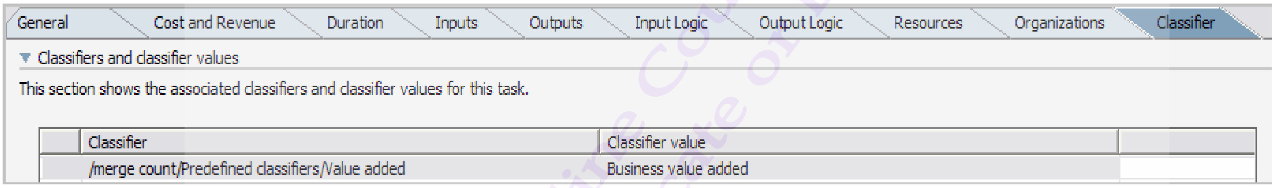
Select an organization unit.

Corporate Security

Locations

Select a location.

Headquarters



Classifiers and classifier values

This section shows the associated classifiers and classifier values for this task.

Classifier	Classifier value
/merge count/Predefined classifiers/Value added	Business value added

Figure 5-34. Task — detailed attributes (6 of 6) VB1841.0

Notes:

Understanding connection graphics

- Connection graphics
  - The line is called a “connection”.
  - The small rounded corner box before and after a task is the input or output “criterion”.
  - The small chevron in the criterion box is called the input or output.
- Graphic meaning
  - Empty input/output criterion (little box) means nothing is assigned.
  - Empty input/output (chevron) means an assignment was made but no business item associated.
  - Shaded input/output (chevron) means a business item is assigned.
- Observing the assignments
  - Hover over the inputs and outputs to see the assignments.

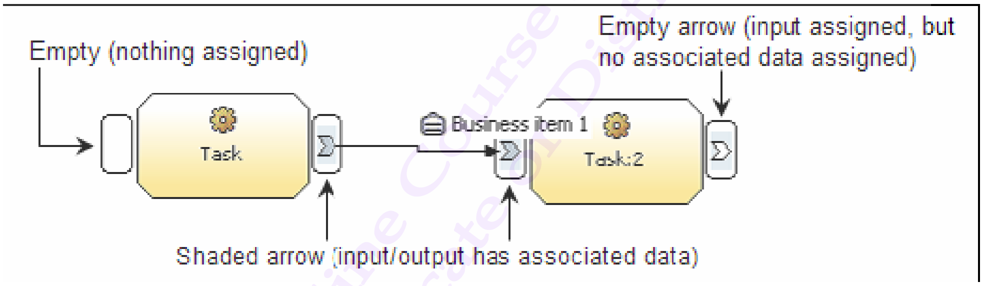

Empty (nothing assigned)
Empty arrow (input assigned, but no associated data assigned)
Task
Business item 1
Task:2
Shaded arrow (input/output has associated data)

Figure 5-35. Understanding connection graphics VB1841.0

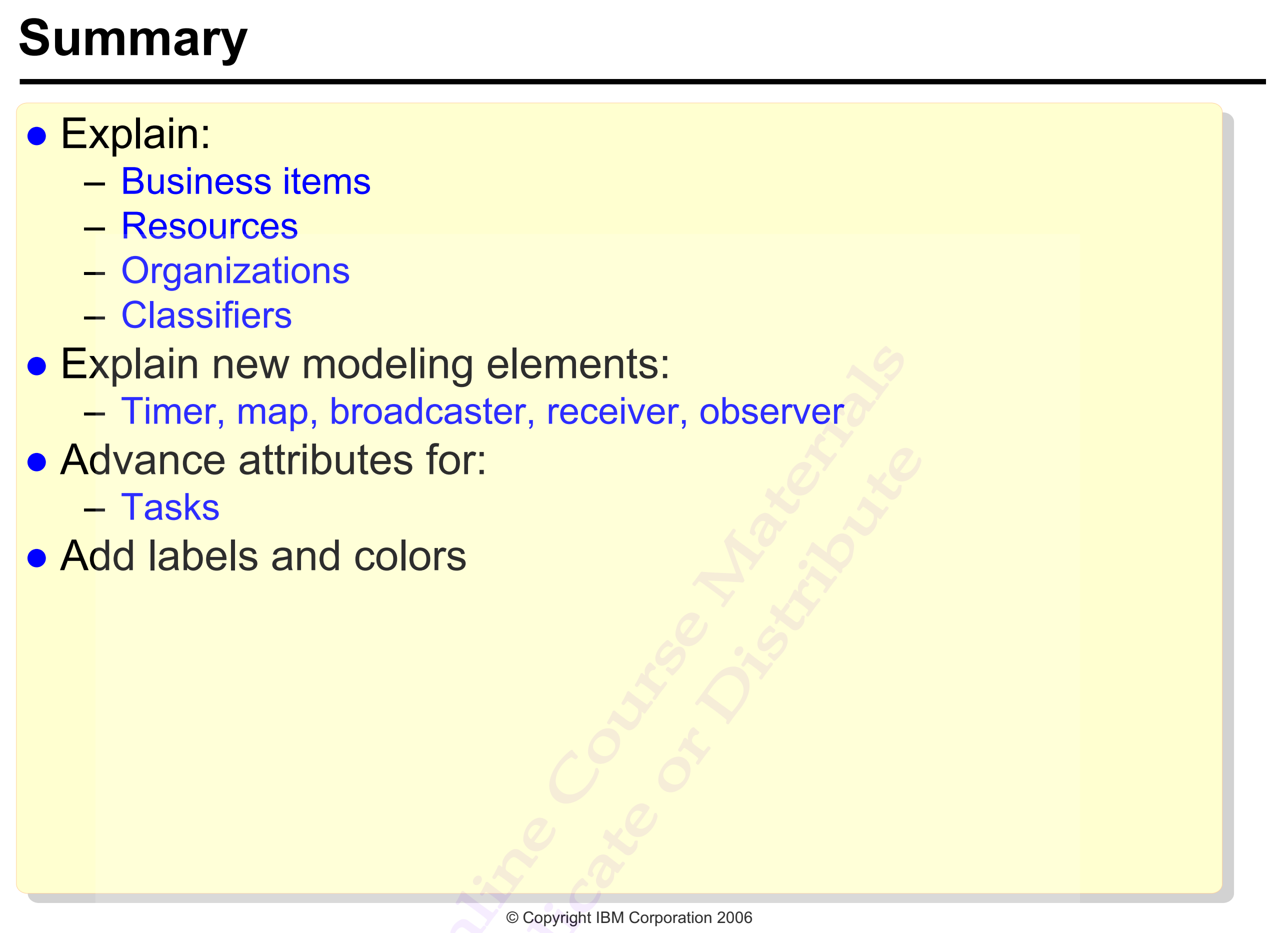
Notes:

Making the diagram more meaningful

- Displaying labels
  - – Labels can be displayed on the diagram to show information associated with process elements.
  - – Labels are a convenient way to view important attributes.
    - Labels contain the attribute information.
    - Two labels can be specified (top and bottom) for any element.
- Adding colors
  - – Colors can be added to resource definitions, roles, organization units, locations, and classifier values.
    - When you then associate these items with elements in the process diagram (such as tasks), you can color-code the diagram to see at a glance which elements are associated with specific values.
- Color-coding by classifiers
  - – After creating classifiers and assigning classifier values to process elements, you can color-code the diagram based on the classifiers.

Figure 5-36. Making the diagram more meaningful VB1841.0

Notes:



Summary

- Explain:
  - Business items
  - Resources
  - Organizations
  - Classifiers
- Explain new modeling elements:
  - Timer, map, broadcaster, receiver, observer
- Advance attributes for:
  - Tasks
- Add labels and colors

Figure 5-37. Summary VB1841.0

Notes:

Exercise

- Creating data structures
- Defining organization units
- Creating roles
- Associating colors with roles
- Creating timetables
- Creating resources
- Assigning roles and organization units to tasks
- Assigning costs and durations
- Assigning classifiers

Figure 5-38. Exercise VB1841.0

Notes:

Review questions

- What is the definition of a business item?
- What is the difference between a business service and a service in Modeler?
- What is a business service object?
- When defining timetables, how do you specify lunch break or vacation time for the resources?
- What is the difference between roles and resources?
- What is the function of a classifier?

Figure 5-39. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 6. Completing the process model

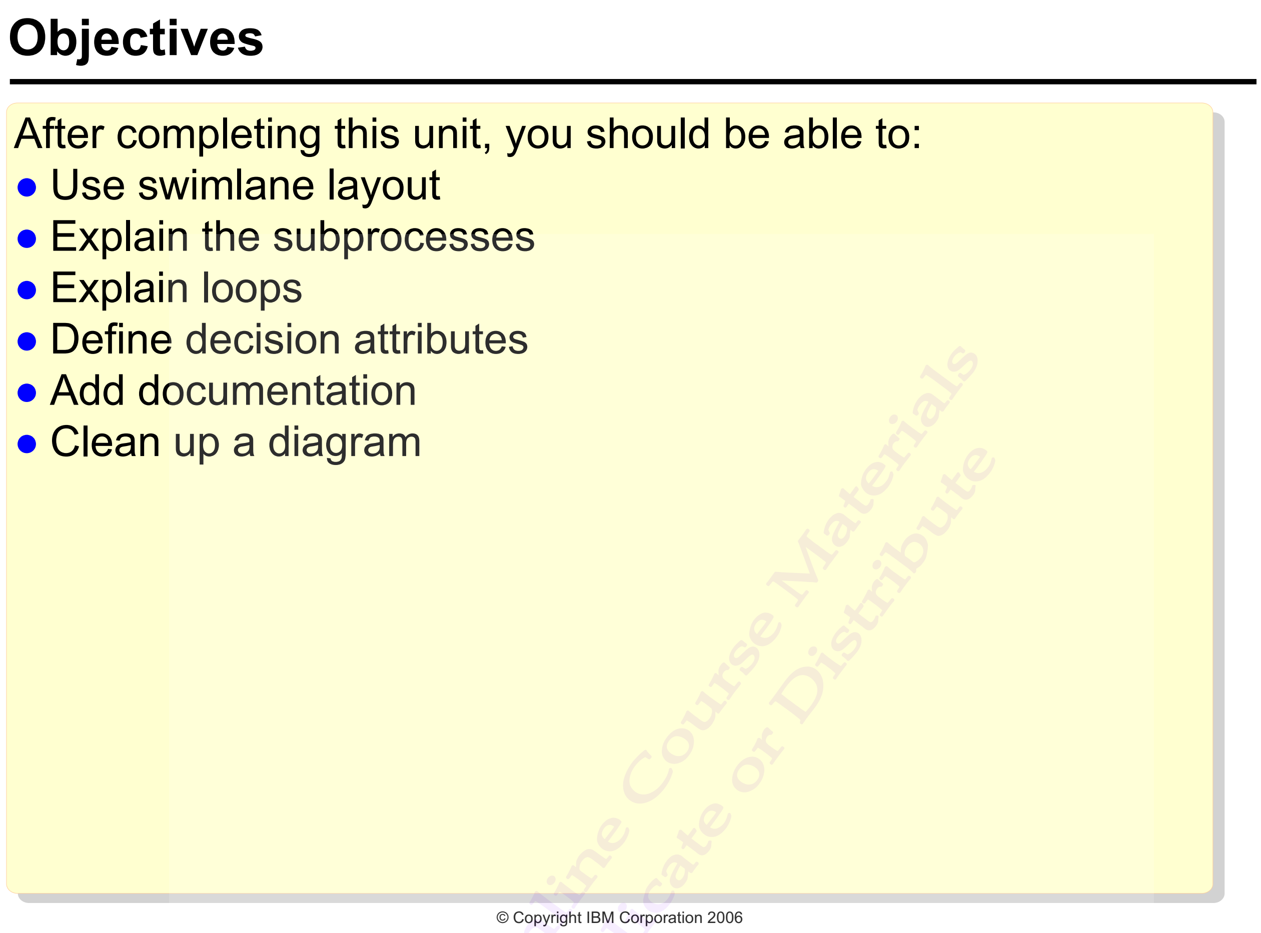
What this unit is about

This unit describes the completion of a process model.

What you should be able to do

After completing this unit, you should be able to:

- Use swimlane layout
- Describe the subprocesses
- Explain loops
- Define decision attributes
- Add documentation
- Clean up a diagram



Objectives

After completing this unit, you should be able to:

- Use swimlane layout
- Explain the subprocesses
- Explain loops
- Define decision attributes
- Add documentation
- Clean up a diagram

Figure 6-1. Objectives VB1841.0

Notes:

Completing the process model

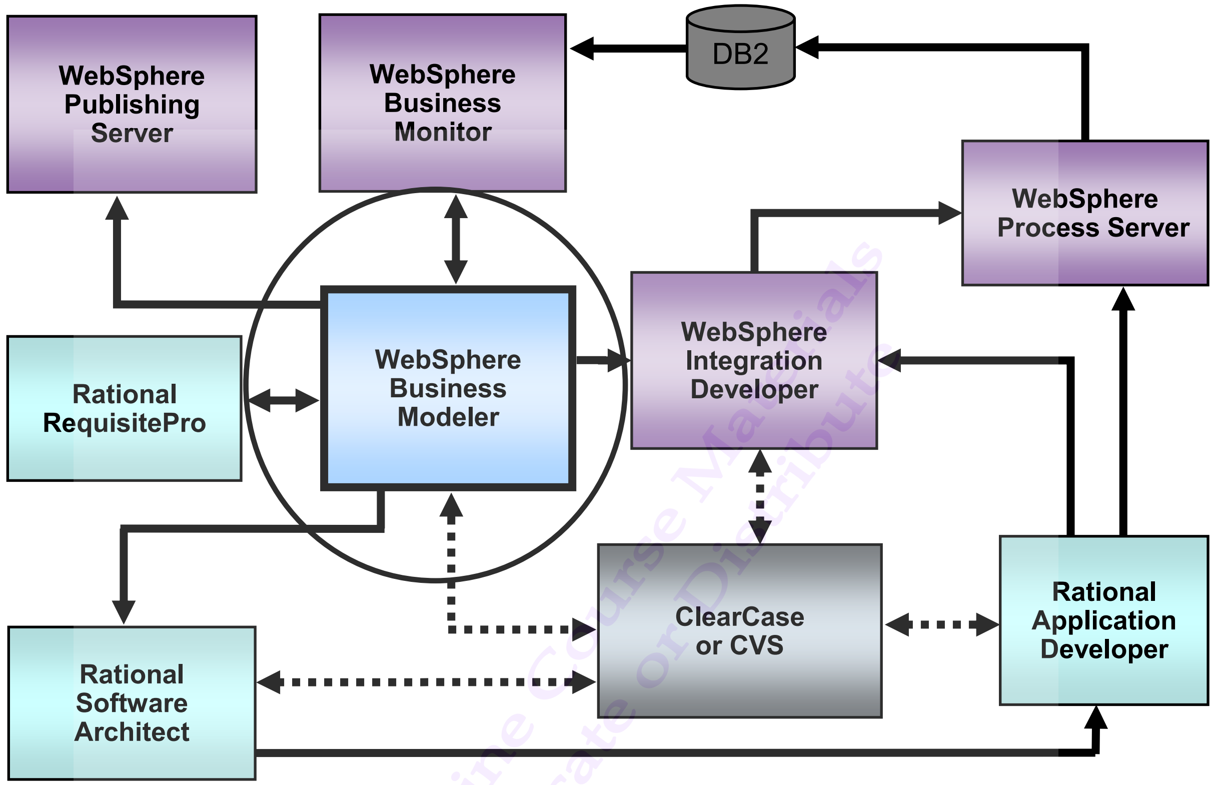

WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
WebSphere Integration Developer
Rational RequisitePro
WebSphere Business Modeler
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 6-2. Completing the process model VB1841.0

Notes:

WebSphere Business Modeler is just one of the tools in the toolset — when combined with the other tools it supports the entire BDD life cycle. The real focus of the class is on the Business Modeler, but you will see interfaces to the supporting and development products in the latter half of the course.

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)

Free-form and swimlane

- Free-form
  - Set or change the position of elements within the diagram in any location
- Swimlane
  - Arranges the process flow in a way that allows you to focus on the interaction between:
    - Roles
    - Organization units
    - Locations
    - Classifiers
    - Individual resource definitions
    - Bulk resource definitions

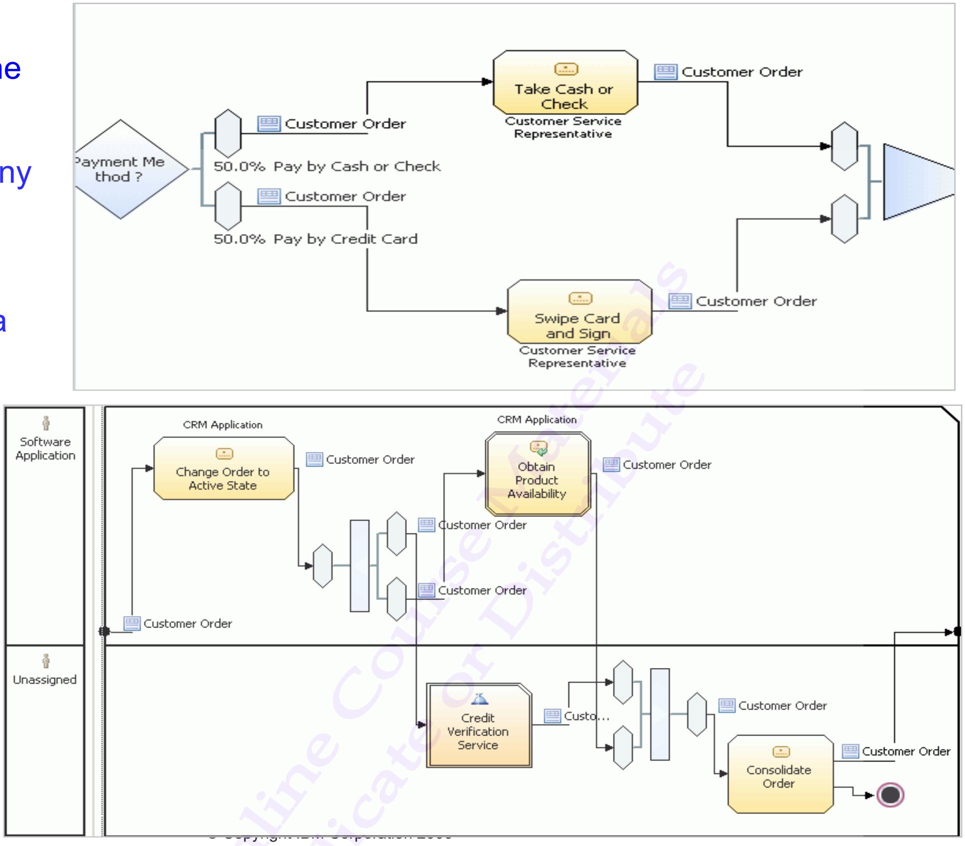


Figure 6-3. Free-form and swimlane VB1841.0

Notes:

Modeling techniques

- Modeling techniques are similar in both layouts.
- Open a new model in either layout.
- Both layouts allow you to:
  - Add elements from the palette or from the project tree
  - Copy, paste, or delete elements on the diagram
  - Select elements in the diagram to display and edit their properties
  - Auto-layout
- Switch the layout as needed from the process editor.
- Printed diagrams are based on the layout that is displayed at the time of printing.
- The process editor opens a diagram using the layout the diagram had when it was last closed.

Figure 6-4. Modeling techniques VB1841.0

Notes:

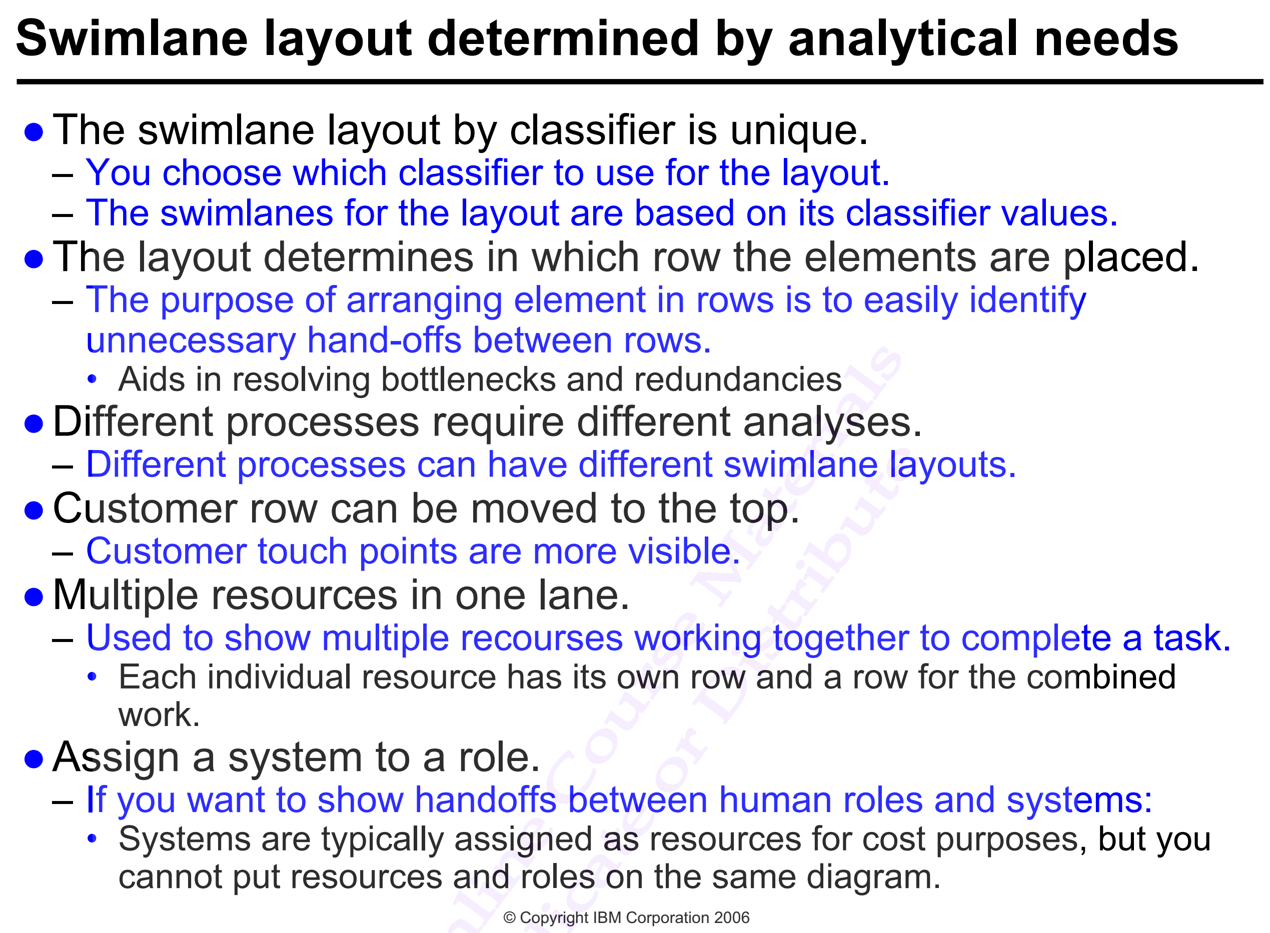
Swimlane — additional capabilities

- Additional functions
  - – Change the size of the swimlane manually or automatically.
    - Manually drag the swimlane boundary.
    - Swimlane will automatically resize to accommodate new elements.
  - – Insert, move, and remove swimlanes.
  - – Unassigned elements are placed at the bottom in an unassigned row.
    - An unassigned row can be closed if there are no unassigned elements.

- Additional warning
  - – An incorrect swimlane indicator — small red barred circle
    - Appears when the element's attributes do not match the swimlane

Figure 6-5. Swimlane — additional capabilities VB1841.0

Notes:



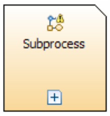
Swimlane layout determined by analytical needs

- The swimlane layout by classifier is unique.
  - You choose which classifier to use for the layout.
  - The swimlanes for the layout are based on its classifier values.
- The layout determines in which row the elements are placed.
  - The purpose of arranging element in rows is to easily identify unnecessary hand-offs between rows.
    - Aids in resolving bottlenecks and redundancies
- Different processes require different analyses.
  - Different processes can have different swimlane layouts.
- Customer row can be moved to the top.
  - Customer touch points are more visible.
- Multiple resources in one lane.
  - Used to show multiple recourses working together to complete a task.
    - Each individual resource has its own row and a row for the combined work.
- Assign a system to a role.
  - If you want to show handoffs between human roles and systems:
    - Systems are typically assigned as resources for cost purposes, but you cannot put resources and roles on the same diagram.

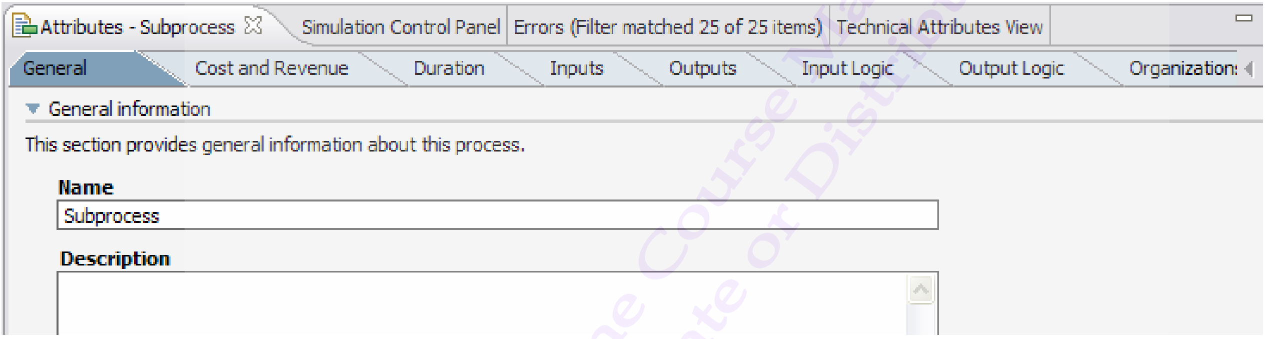
Figure 6-6. Swimlane layout determined by analytical needs VB1841.0

Notes:

Local process and subprocess



- A subprocess is a local process within another process.
  - View and edit subprocesses by selecting the subprocess in the parent process diagram where the subprocess is displayed.
  - To edit a subprocess (+), you must open the parent process diagram.
- Define the process flow, using the same techniques as for a global process.
- Connect the final activity to the stop node.
  - Without a stop node, the subprocess will not end or produce output.



This section provides general information about this process.

Name

Subprocess

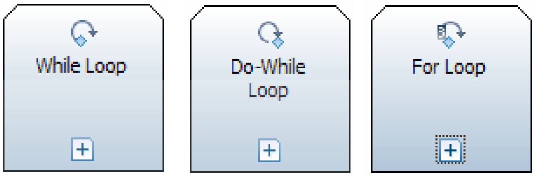
Description

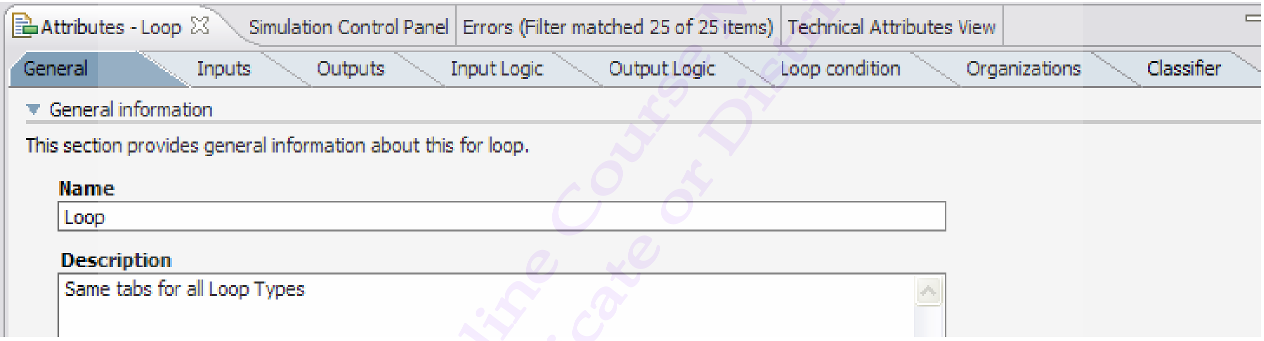
Figure 6-7. Local process and subprocess VB1841.0

Notes:

Loop (1 of 2)

- A loop is a repeating sequence of activities contained within a process
- Three types of loops available:
  - For loop
    - Repeats the same sequence of activities a ***specified*** number of times
  - While loop
    - Repeats while some condition is satisfied, testing its condition at the ***beginning*** of every loop
    - The loop may never run
  - Do-while loop
    - Repeats while some condition is satisfied, testing its condition at the ***end*** of the loop
    - The loop will run at least once





This section provides general information about this for loop.

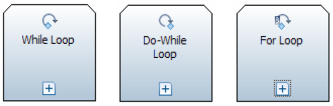
Name
Loop

Description
Same tabs for all Loop Types

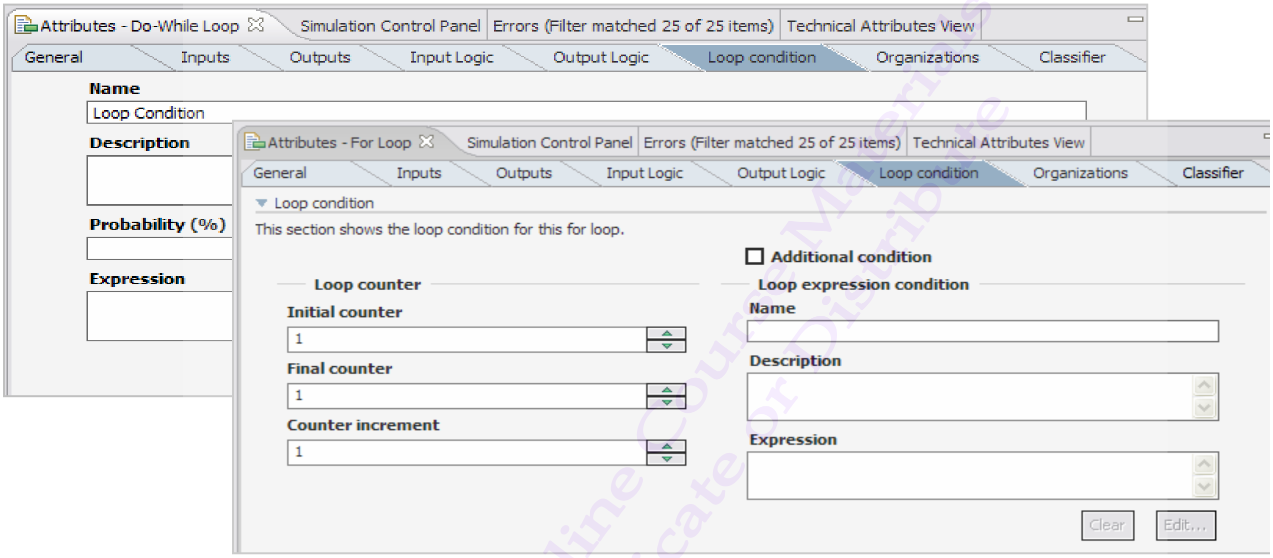
Figure 6-8. Loop (1 of 2) VB1841.0

Notes:

Loop (2 of 2)



- Inputs into loops do not work the same way as inputs into subprocesses.
  - Inputs to loops can be checked by the loop condition, but they cannot be used as inputs by elements within the body of the loop.
  - To pass data into a loop, use a repository.
  - Use a local repository if you intend to use an expression.
    - Expression Builder cannot access global repositories



Name
Loop Condition

Description

Probability (%)

Expression

Loop condition

This section shows the loop condition for this for loop.

☐ **Additional condition**

Loop counter

Initial counter
1

Final counter
1

Counter increment
1

Loop expression condition

Name

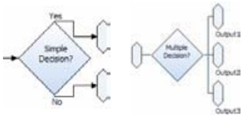
Description

Expression

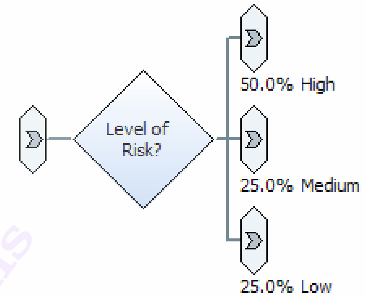
Figure 6-9. Loop (2 of 2) VB1841.0

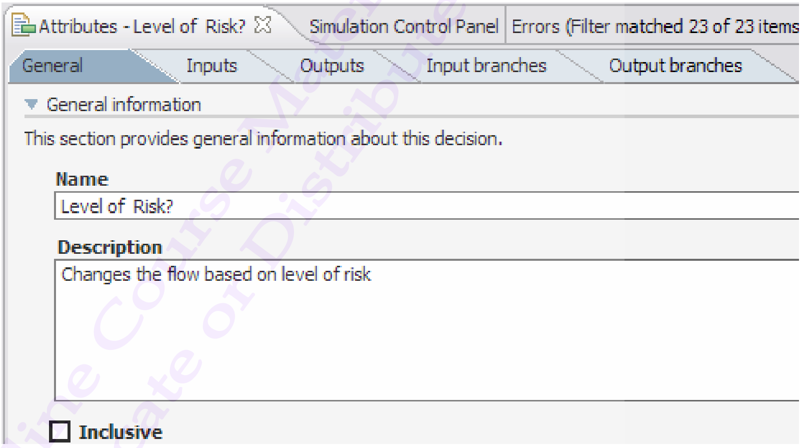
Notes:

Decisions — detailed attributes (1 of 4)



- Detailed attributes complete the definition of the decision
  - Simple and multiple attributes are similar
- Will use a multiple-choice decision example to explain attributes
  - Example — changing process flow based on level of risk
  - Probabilities can be displayed on the output branches
  - Names can be assigned to the output branches
- General
  - Inclusive check box
    - One or more outputs
    - The combination of outputs is determined by the expression





This section provides general information about this decision.

Name
Level of Risk?

Description
Changes the flow based on level of risk

☐ **Inclusive**

Figure 6-10. Decisions — detailed attributes (1 of 4) VB1841.0

Notes:

Detailed attributes complete the definition of the decision.

- Simple and multiple attributes are similar.

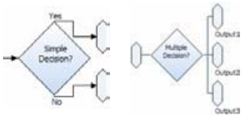
A multiple-choice decision example will explain attributes.

- Example — changing process flow based on level of risk:
  - Probabilities can be displayed on the output branches
  - Names can be assigned to the output branches

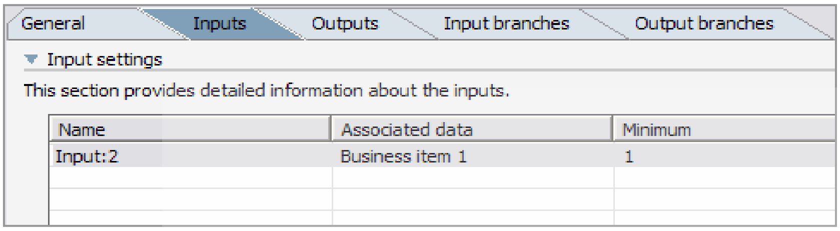
General:

- Inclusive check box:
  - One or more outputs.
  - The combination of outputs is determined by the expression.

Decisions — detailed attributes (2 of 4)



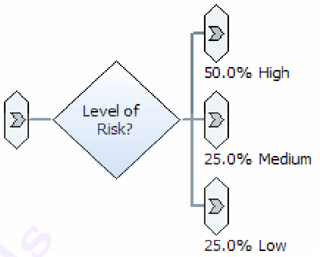
- Inputs: one or more business items



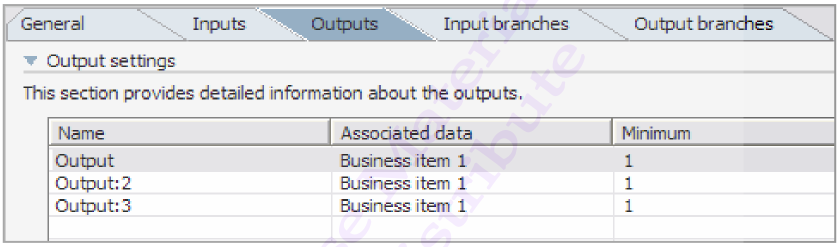
Input settings

This section provides detailed information about the inputs.

Name	Associated data	Minimum
Input:2	Business item 1	1



- Outputs
  - The outputs match the inputs; no work is performed by a decision
  - One set of outputs for each branch

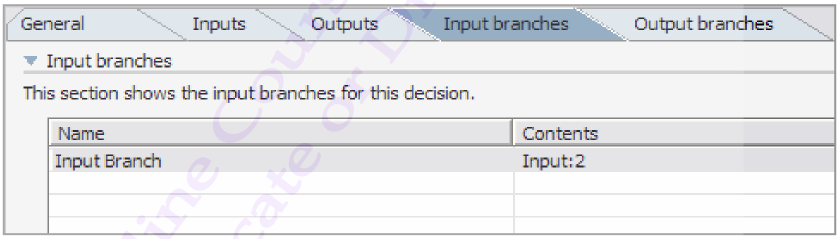


Output settings

This section provides detailed information about the outputs.

Name	Associated data	Minimum
Output	Business item 1	1
Output:2	Business item 1	1
Output:3	Business item 1	1

- Input branches



Input branches

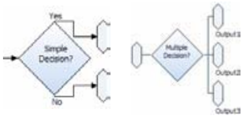
This section shows the input branches for this decision.

Name	Contents
Input Branch	Input:2

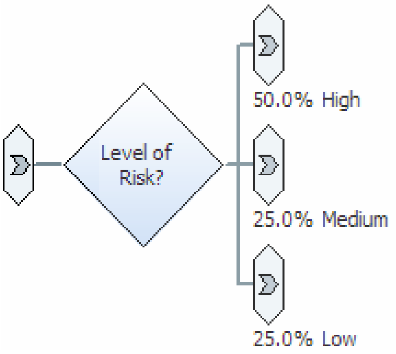
Figure 6-11. Decisions — detailed attributes (2 of 4) VB1841.0

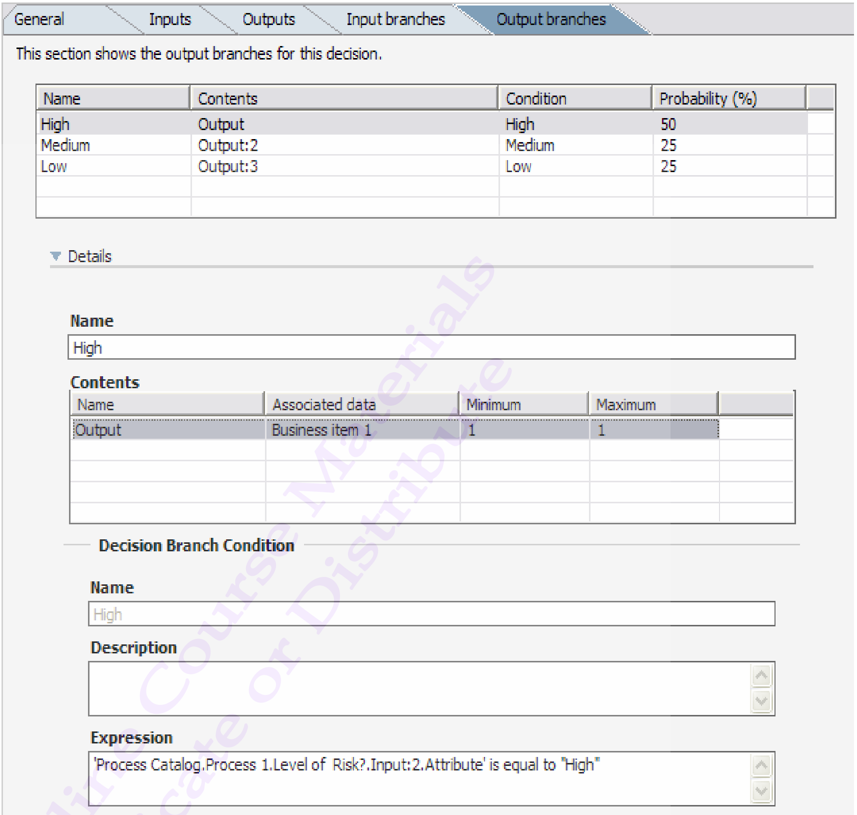
Notes:

Decisions — detailed attributes (3 of 4)



- Output branches
  - Name the branches
  - Specify the probabilities
  - Create the expression to control the flow for each output path
  - Edit opens an expression editor





This section shows the output branches for this decision.

Name	Contents	Condition	Probability (%)
High	Output	High	50
Medium	Output:2	Medium	25
Low	Output:3	Low	25

Details

Name

High

Contents

Name	Associated data	Minimum	Maximum
Output	Business item 1	1	1

Decision Branch Condition

Name

High

Description

Expression

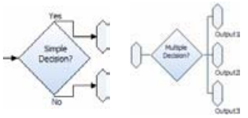
'Process Catalog.Process 1.Level of Risk?.Input:2.Attribute' is equal to "High"

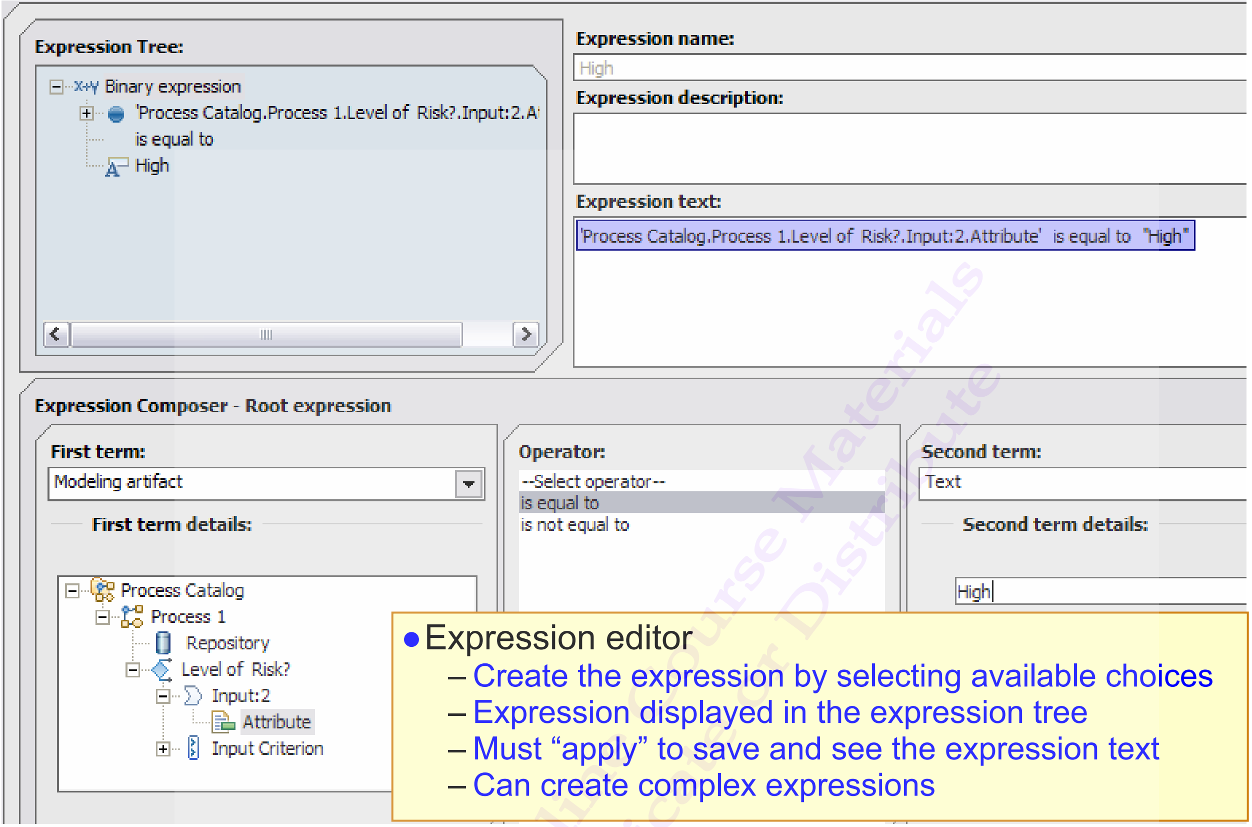
Figure 6-12. Decisions — detailed attributes (3 of 4) VB1841.0

Notes:

Self-Paced Course Materials
Do Not Duplicate or Distribute

Decisions — detailed attributes (4 of 4)





Expression Tree:

- Binary expression
  - 'Process Catalog.Process 1.Level of Risk?.Input:2.A
  - is equal to
  - High

Expression name: High

Expression description:

Expression text: 'Process Catalog.Process 1.Level of Risk?.Input:2.Attribute' is equal to "High"

Expression Composer - Root expression

First term: Modeling artifact

First term details:

- Process Catalog
  - Process 1
    - Repository
    - Level of Risk?
      - Input:2
        - Attribute
      - Input Criterion

Operator:

--Select operator--
is equal to
is not equal to

Second term: Text

Second term details: High

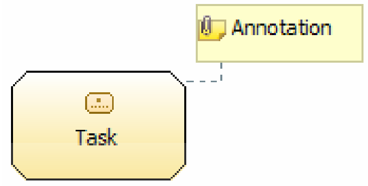
- Expression editor
  - Create the expression by selecting available choices
  - Expression displayed in the expression tree
  - Must “apply” to save and see the expression text
  - Can create complex expressions

Figure 6-13. Decisions — detailed attributes (4 of 4) VB1841.0

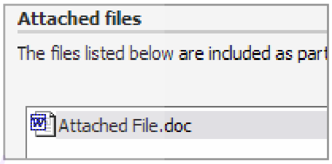
Notes:

Additional process documentation

- Add annotations to diagrams
  - Add anywhere in a process, structure, or structure definition diagram
  - Attach annotations to any element



- Attach files to elements
  - Files can be attached to process elements that are displayed in the Project Tree.
    - The files become part of the element to which they are attached.
    - After attaching, a file can be opened by clicking the name.

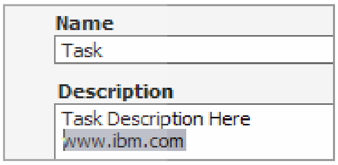


Attached files

The files listed below are included as part

Attached File.doc

- Add URL link in description
  - URL links can be added to a description field in an editor or in the Attributes view.
    - After adding, it can be opened by clicking the link in the description and selecting browse.



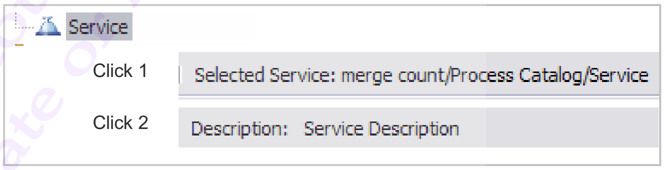
Name

Task

Description

Task Description Here
www.ibm.com

- Viewing descriptions of elements in the Project Tree
  - Click twice to see description in status bar at bottom
    - The first time to display the path in the tree
    - A second time to display the description
  - Double-click to open the element in the editor
    - View and edit the description



Service

Click 1 Selected Service: merge count/Process Catalog/Service

Click 2 Description: Service Description

Figure 6-14. Additional process documentation VB1841.0

Notes:

Organizing the diagram (1 of 3)

- Using gridlines to create the diagram
  - The gridlines can be toggled on and off as needed.
    - New elements will be laid on the diagram where you put them.
    - Dragging elements will snap to the grid.
- Auto-layout allows the system to arrange the diagram
  - Select Auto-layout Left to Right
    - Arranges the layout of the diagram so that the direction of flow goes from left to right, and cleans up any overlapping nodes or connections.
    - In swimlane layout, this also moves all elements to their correct swimlanes, creating new swimlanes if necessary.
    - Auto-layout will undo any user layout.
- Aligning multiple elements in a diagram
  - To align two or more elements so that your diagram is easier to read and looks more presentable
    - Select elements to align and select from the alignment options
    - Last element selected is the anchor point

Figure 6-15. Organizing the diagram (1 of 3)

Notes:

Organizing the diagram (2 of 3)

- Moving or resizing elements using the keyboard
  - Arrow keys on the keyboard can be used to move or resize
    - Select the element you want to move.
    - Press the period (.) key until the cursor changes to the desired pointer.
    - Use the arrows keys to move or resize the element.
    - Press the enter the key to accept the change.
  - Toggle grid on editor must be off

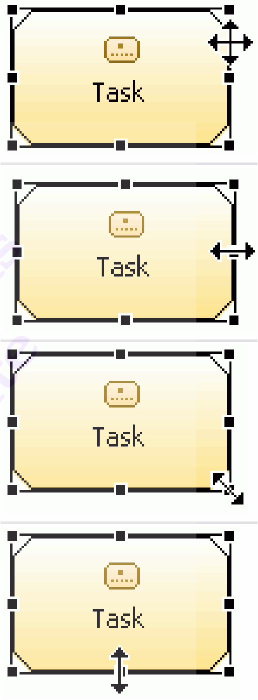


Figure 6-16. Organizing the diagram (2 of 3)

VB1841.0

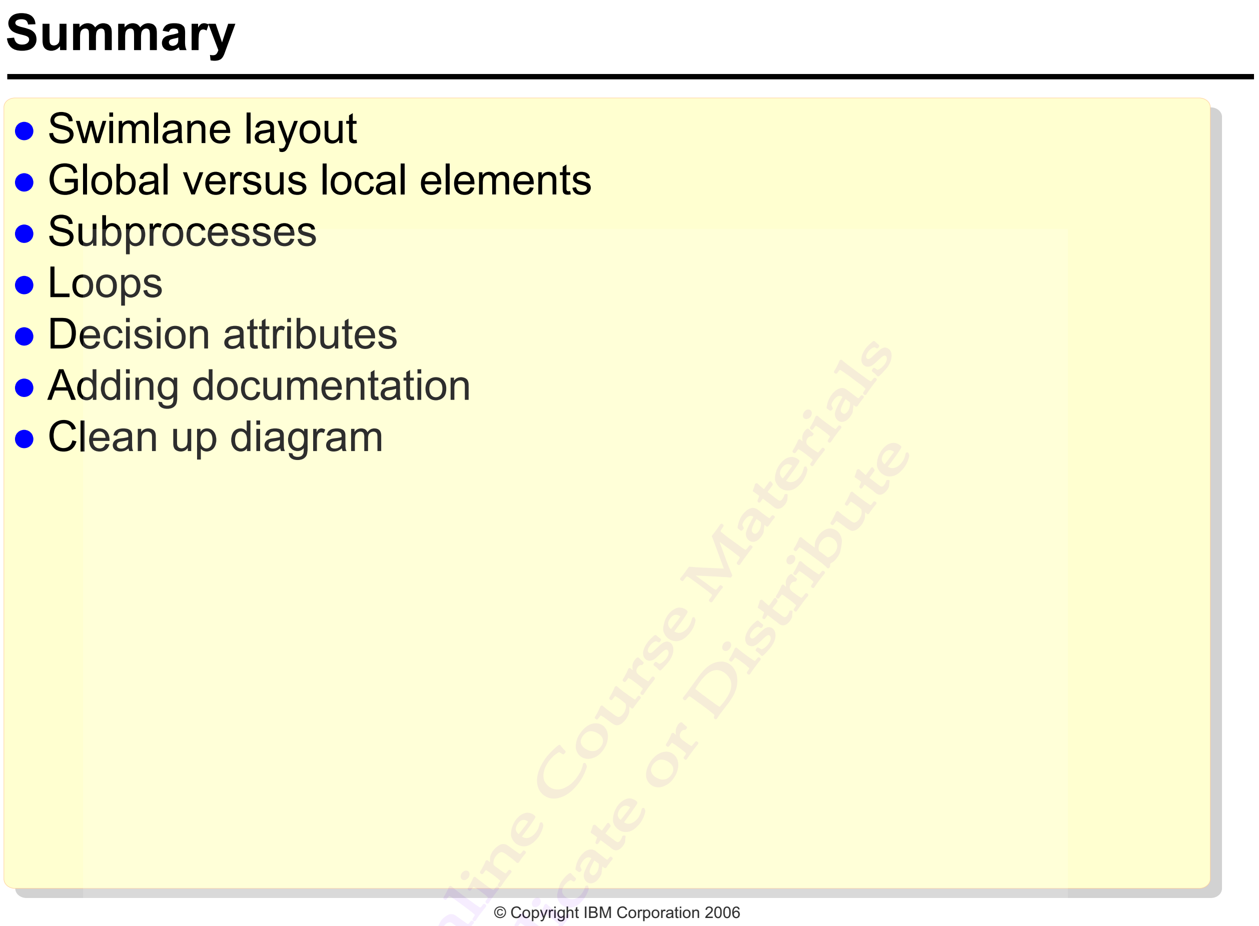
Notes:

Organizing the diagram (3 of 3)

- Fix overlapping and crossing connections
  - Uncross connectors by moving the input or output nodes up or down
  - Move task inputs and outputs
    - Right-click, select Input and Output, select Modify Input or Output Order
    - Retains any criteria assigned to it and its connections to other process elements
  - Move decision or fork branches
    - Select, right-click, and select Modify Output Branches Order
    - Retains any values assigned to it and its connections to other process elements
  - Move merge or join input branches
    - Select, right-click, and select Modify Input Branches Order
    - Retains any values assigned to it and its connections to other process elements

Figure 6-17. Organizing the diagram (3 of 3) VB1841.0

Notes:



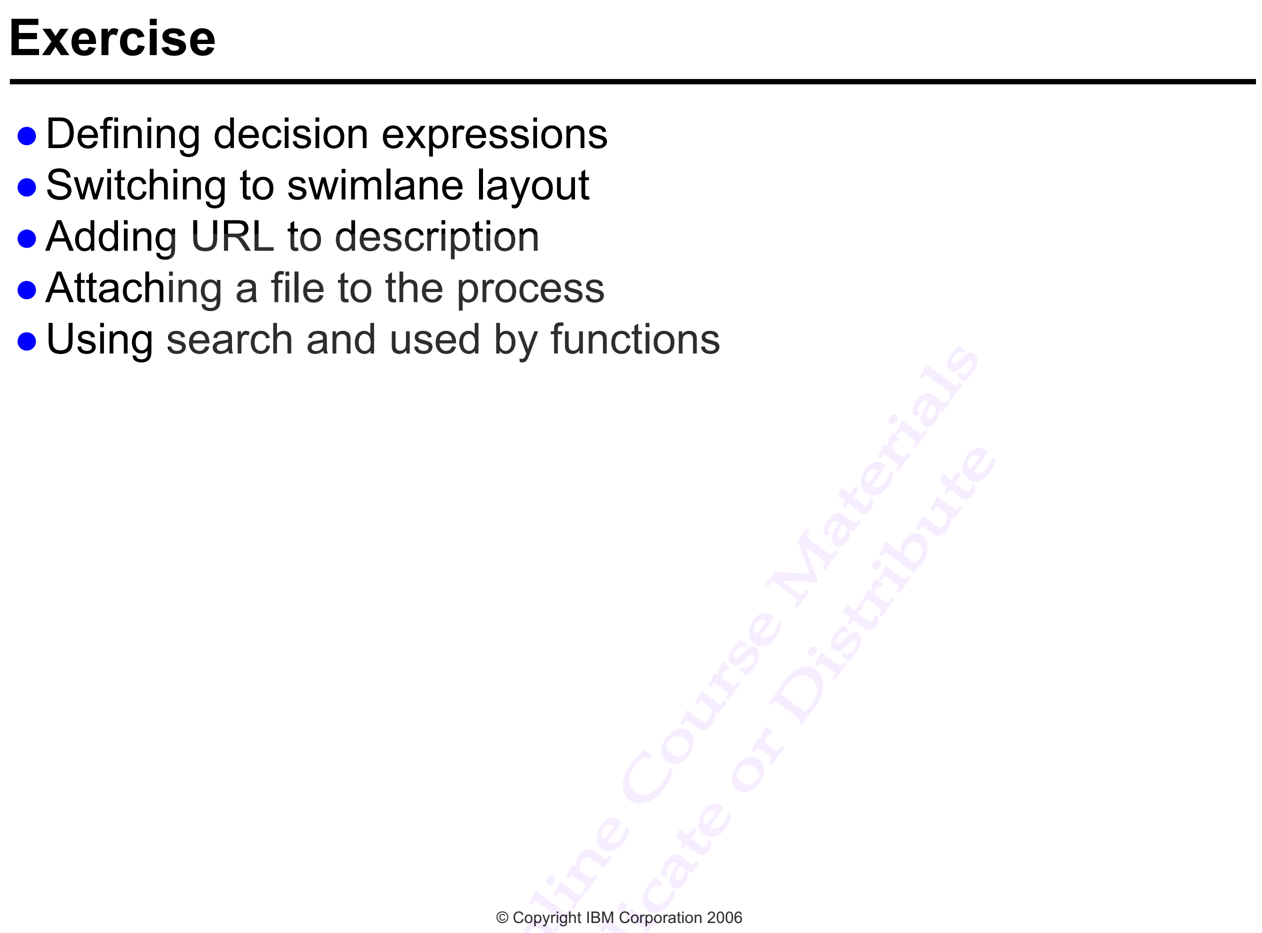
Summary

- Swimlane layout
- Global versus local elements
- Subprocesses
- Loops
- Decision attributes
- Adding documentation
- Clean up diagram

Figure 6-18. Summary

VB1841.0

Notes:

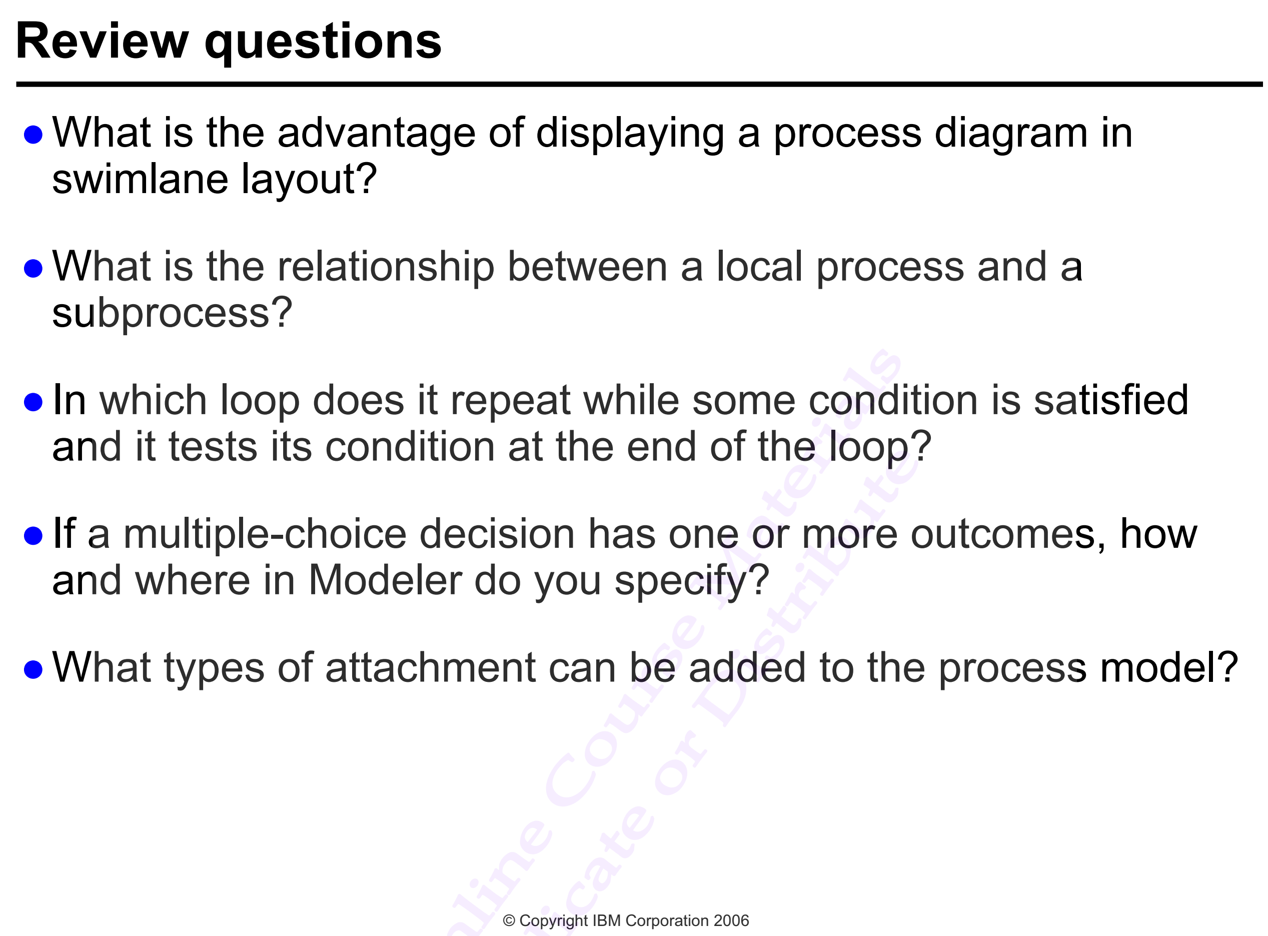


Exercise

- Defining decision expressions
- Switching to swimlane layout
- Adding URL to description
- Attaching a file to the process
- Using search and used by functions

Figure 6-19. Exercise VB1841.0

Notes:



Review questions

- What is the advantage of displaying a process diagram in swimlane layout?
- What is the relationship between a local process and a subprocess?
- In which loop does it repeat while some condition is satisfied and it tests its condition at the end of the loop?
- If a multiple-choice decision has one or more outcomes, how and where in Modeler do you specify?
- What types of attachment can be added to the process model?

Figure 6-20. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 7. Model validation and static analysis

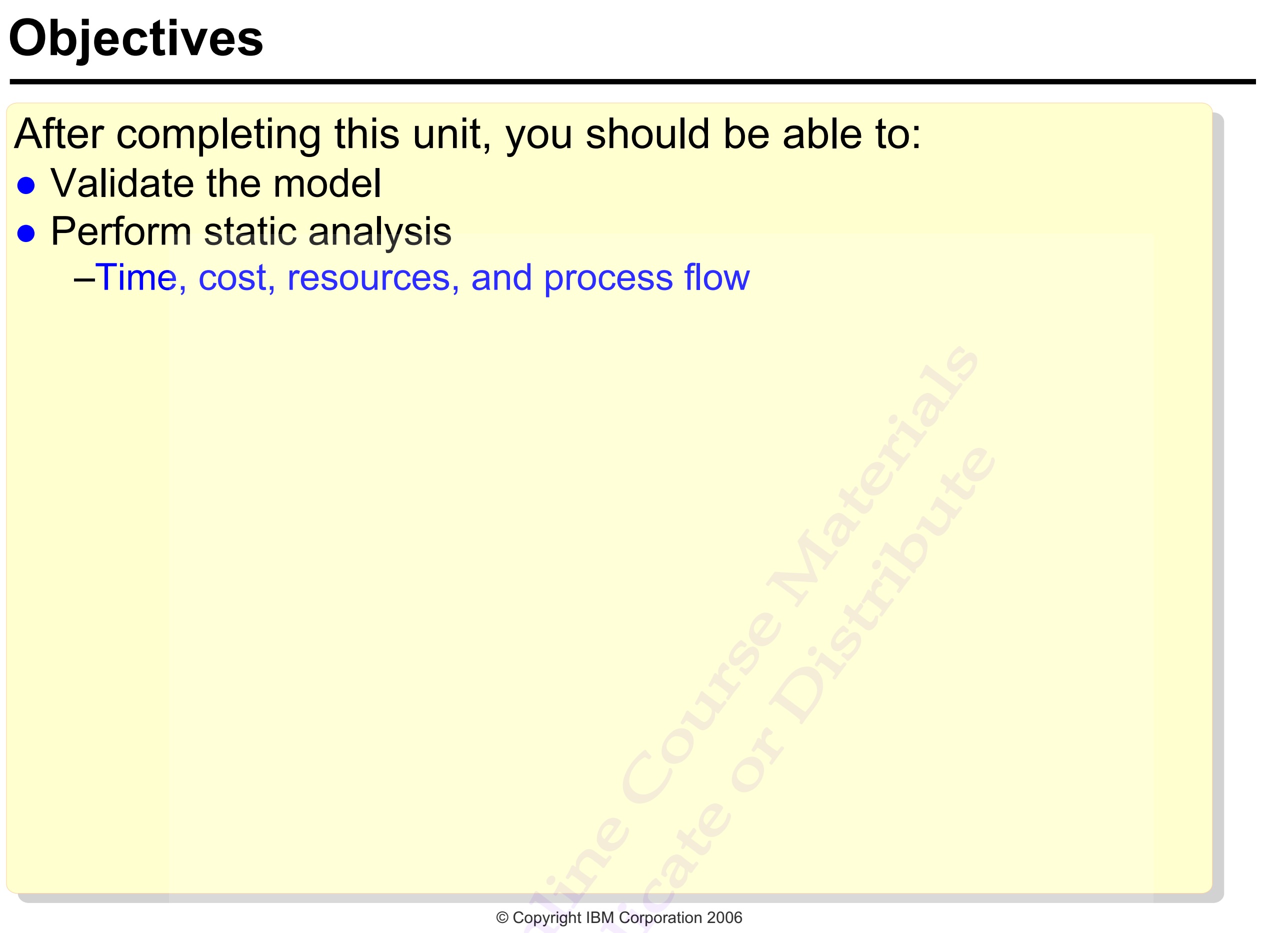
What this unit is about

This unit describes the model validation and static analysis.

What you should be able to do

After completing this unit, you should be able to:

- Validate the model
- Perform static analysis for time, cost, resources, and process flow



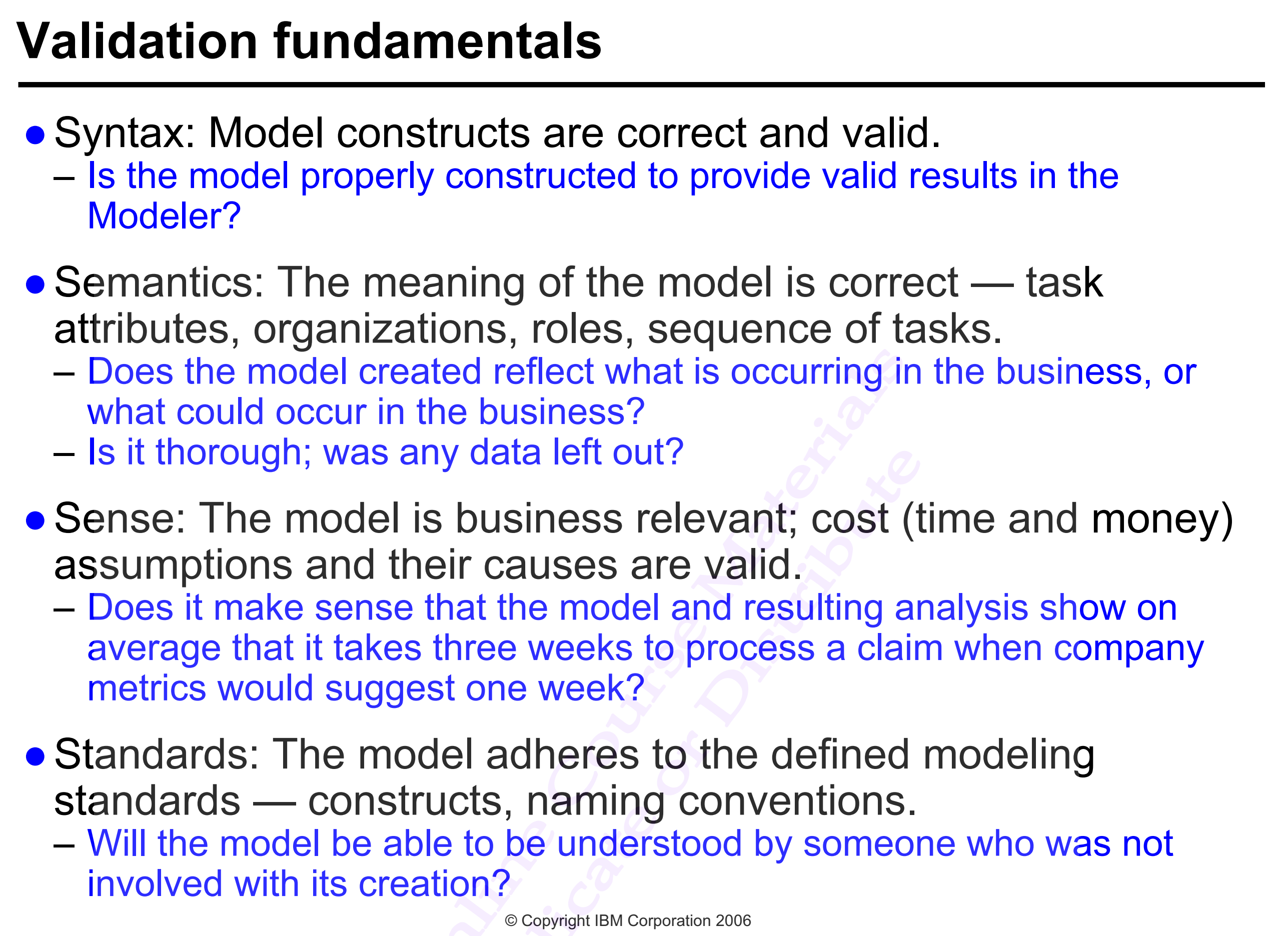
Objectives

After completing this unit, you should be able to:

- Validate the model
- Perform static analysis
  - –Time, cost, resources, and process flow

Figure 7-1. Objectives VB1841.0

Notes:



Validation fundamentals

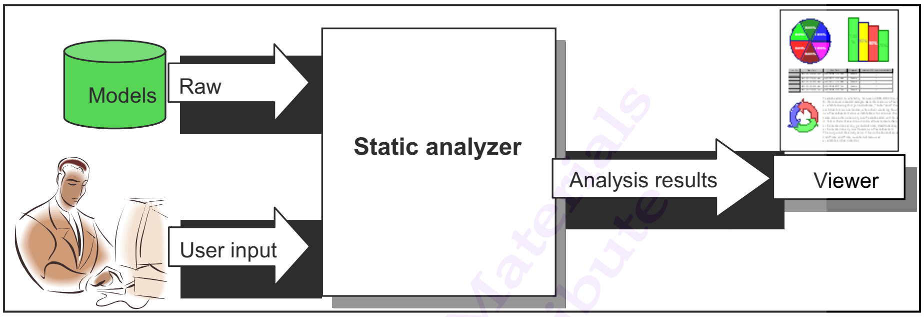
- Syntax: Model constructs are correct and valid.
  - Is the model properly constructed to provide valid results in the Modeler?
- Semantics: The meaning of the model is correct — task attributes, organizations, roles, sequence of tasks.
  - Does the model created reflect what is occurring in the business, or what could occur in the business?
  - Is it thorough; was any data left out?
- Sense: The model is business relevant; cost (time and money) assumptions and their causes are valid.
  - Does it make sense that the model and resulting analysis show on average that it takes three weeks to process a claim when company metrics would suggest one week?
- Standards: The model adheres to the defined modeling standards — constructs, naming conventions.
  - Will the model be able to be understood by someone who was not involved with its creation?

Figure 7-2. Validation fundamentals VB1841.0

Notes:

Static analysis overview

- Gives business users important information computed from the raw data in the models:
  - Cost
  - Time
  - Performance
  - Improvement capabilities
  - Process flow validity
  - Resources leveling
  - Qualified resources to play important roles



Models

Raw

User input

Static analyzer

Analysis results

Viewer

- Inputs are raw model data and parameters entered by the user.
- Results are viewed using either a tabular or graphical viewer.
  - Results can be printed using predefined report templates.

Figure 7-3. Static analysis overview VB1841.0

Notes:

Static analysis functions

Invoked from the process editor

- Process analysis
  - Activities by classifier
  - Activities by location
  - Activities by organization unit
  - Activities unable to start
  - Activity cost and duration
  - Activity resource and role leveling
  - Activity throughput
  - Input and output paths
  - Path cycles
  - Paths unable to be followed

Invoked from the project tree

- Resource analysis
  - Resource roles
  - Qualified resources for role
  - Resource availability
  - Resource availability for duration
  - Qualified resource availability
  - Qualified resource availability for duration
  - Role availability
  - Role availability for duration
  - Resource cost
  - Resources costs summary
  - Qualified resource cost
  - Qualified resources costs summary
  - Role cost
  - Roles costs summary
- Organization analysis
  - Type structure
  - Entity structure
- General analysis
  - Type instance matching analysis
  - Type instance matching matrix analysis
  - Matrix analysis

Figure 7-4. Static analysis functions VB1841.0

Notes:

Process model analysis (1 of 2)

- Activities by classifier
  - Returns the activities of the process categorized by key identifiers
- Activities by location
  - Returns the activities of the process that are performed at each location
- Activities by organization unit
  - Returns the activities performed by each organization unit used within the process
- Activities unable to start
  - Returns a list of activities in the process that cannot be performed due to unavailable resources, empty input criteria, or inputs that lack connections
- Activity cost and duration
  - Returns the cost of each activity as a sum of the average costs of the allocated resources
    - It also computes the total working duration of the allocated resources of each activity, and the minimum working duration of the activity.

Figure 7-5. Process model analysis (1 of 2) VB1841.0

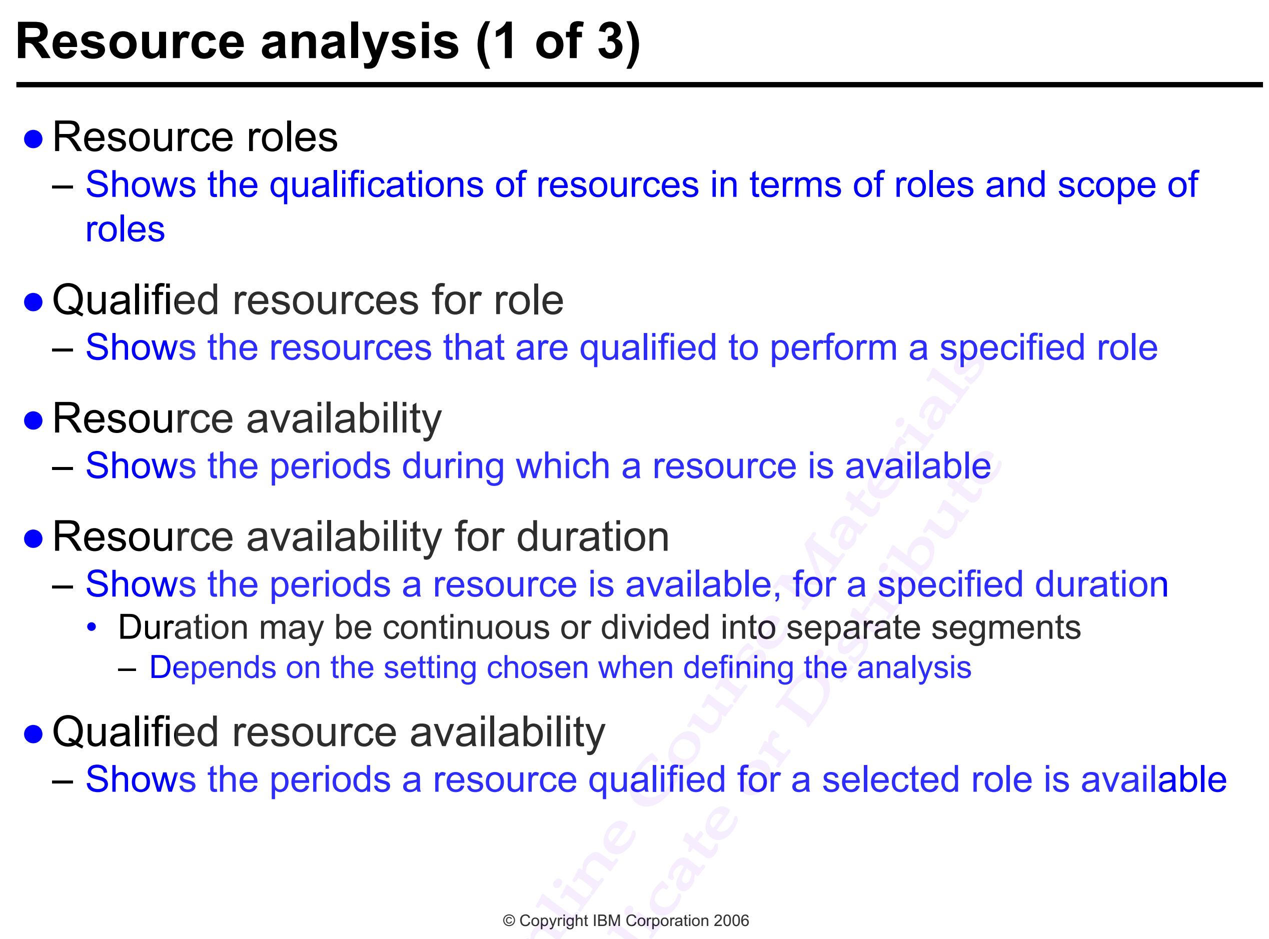
Notes:

Process model analysis (2 of 2)

- Activity resource and role leveling
  - Compares the number of required resources to the number of available resources for each activity in the process
- Activity throughput
  - Returns the productivity per time unit of activities in the process
- Input and output paths
  - Returns the paths in the process that lead in and out of a specified input or output of an activity
- Path cycles
  - Returns the cycles in the process, where a cycle is defined as a path with a closed loop of connectors
- Paths unable to be followed
  - Returns a list of paths in the process that cannot be followed, as a result of one or more undoable input criteria of activities within the path
    - An undoable input criterion does not imply that the activity is undoable
      - It may be invoked through another input criterion

Figure 7-6. Process model analysis (2 of 2) VB1841.0

Notes:

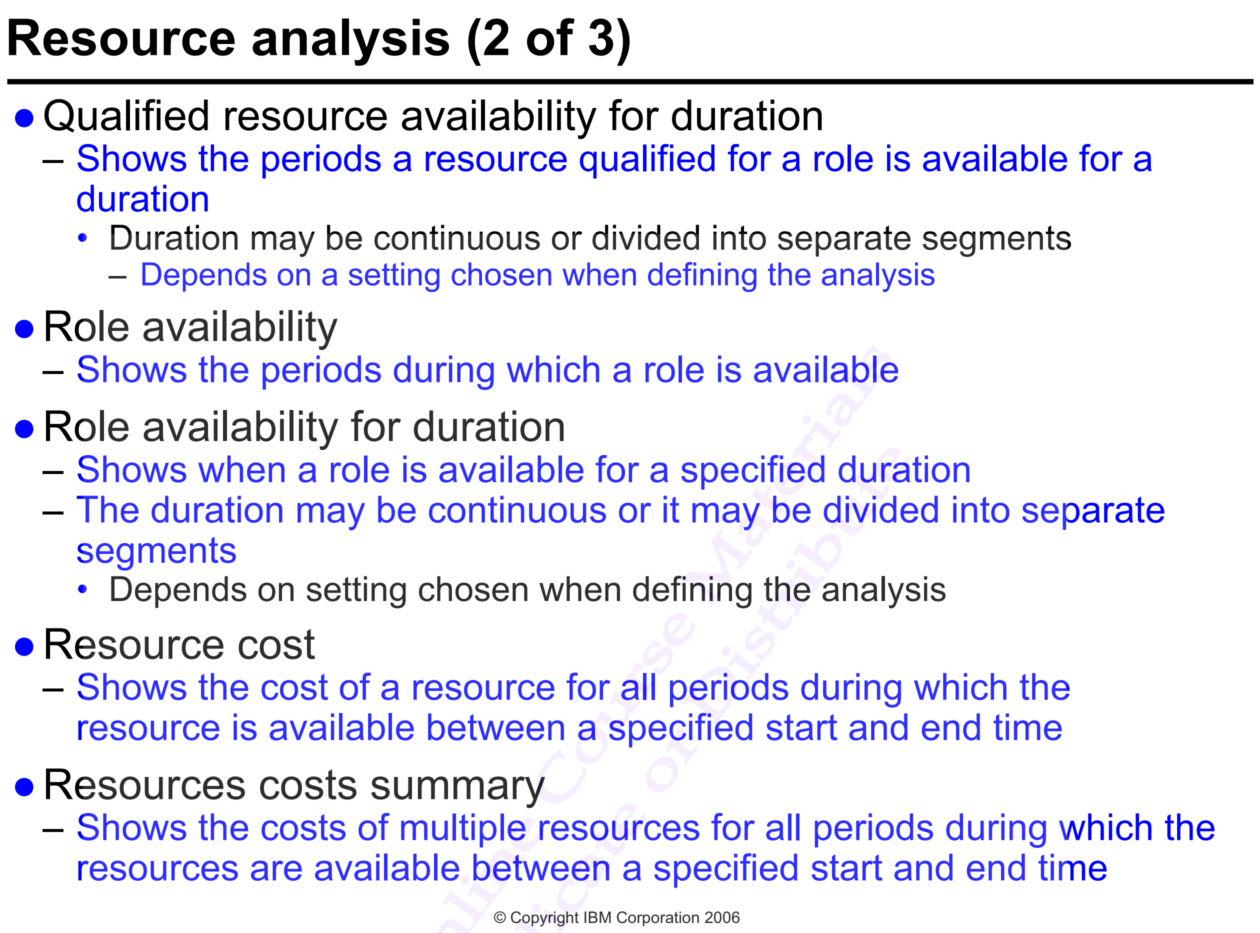


Resource analysis (1 of 3)

- Resource roles
  - Shows the qualifications of resources in terms of roles and scope of roles
- Qualified resources for role
  - Shows the resources that are qualified to perform a specified role
- Resource availability
  - Shows the periods during which a resource is available
- Resource availability for duration
  - Shows the periods a resource is available, for a specified duration
    - Duration may be continuous or divided into separate segments
      - Depends on the setting chosen when defining the analysis
- Qualified resource availability
  - Shows the periods a resource qualified for a selected role is available

Figure 7-7. Resource analysis (1 of 3) VB1841.0

Notes:

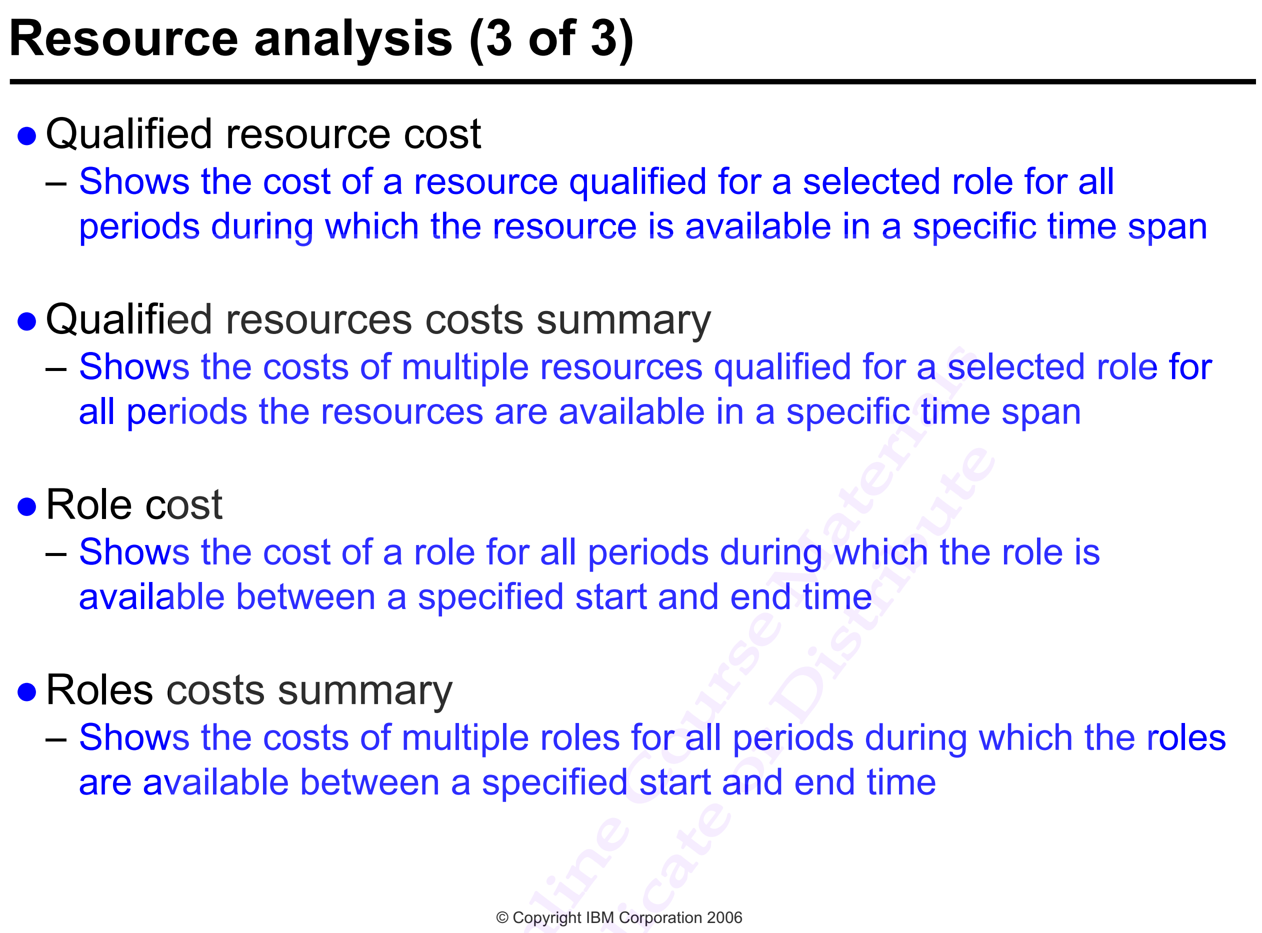


Resource analysis (2 of 3)

- Qualified resource availability for duration
  - Shows the periods a resource qualified for a role is available for a duration
    - Duration may be continuous or divided into separate segments
      - Depends on a setting chosen when defining the analysis
- Role availability
  - Shows the periods during which a role is available
- Role availability for duration
  - Shows when a role is available for a specified duration
  - The duration may be continuous or it may be divided into separate segments
    - Depends on setting chosen when defining the analysis
- Resource cost
  - Shows the cost of a resource for all periods during which the resource is available between a specified start and end time
- Resources costs summary
  - Shows the costs of multiple resources for all periods during which the resources are available between a specified start and end time

Figure 7-8. Resource analysis (2 of 3) VB1841.0

Notes:



Resource analysis (3 of 3)

- Qualified resource cost
  - Shows the cost of a resource qualified for a selected role for all periods during which the resource is available in a specific time span
- Qualified resources costs summary
  - Shows the costs of multiple resources qualified for a selected role for all periods the resources are available in a specific time span
- Role cost
  - Shows the cost of a role for all periods during which the role is available between a specified start and end time
- Roles costs summary
  - Shows the costs of multiple roles for all periods during which the roles are available between a specified start and end time

Figure 7-9. Resource analysis (3 of 3) VB1841.0

Notes:

Organization model analysis

- Identifies the use and position of organization model elements within structures and structure definitions
  - Entity structure
    - Shows each organization entity’s position in all the structures defined for a project
      - For example, selection of any resource, organization unit, or location of the organization entity will display in the analysis results.
  - Type structure
    - Shows the position of a selected type in the structure definitions defined for a project
      - For example, selection of any resource definition, organization definition, or location definition as the type will display in the analysis.

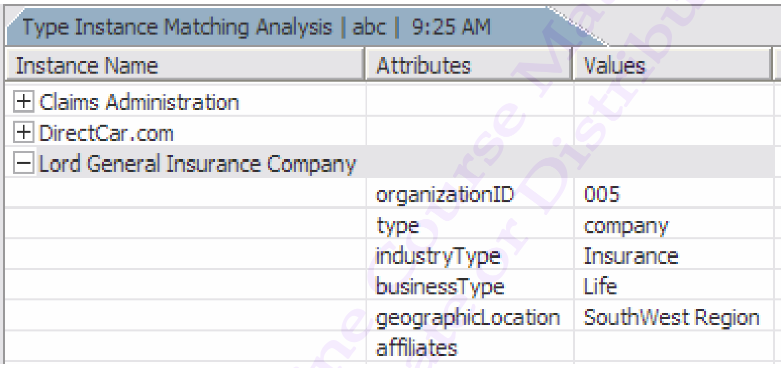
Figure 7-10. Organization model analysis

VB1841.0

Notes:

General analysis

- Analysis to determine the relationships of model elements
- Used for validation and documentation of your project elements
  - **Type instance matching analysis** shows all the instances of a selected model element type that provides a type definition
  - For example:
    - Organization definition, location definition, individual resource definition



Type Instance Matching Analysis | abc | 9:25 AM

Instance Name	Attributes	Values
⊞ Claims Administration		
⊞ DirectCar.com		
⊟ Lord General Insurance Company		
	organizationID	005
	type	company
	industryType	Insurance
	businessType	Life
	geographicLocation	SouthWest Region
	affiliates	

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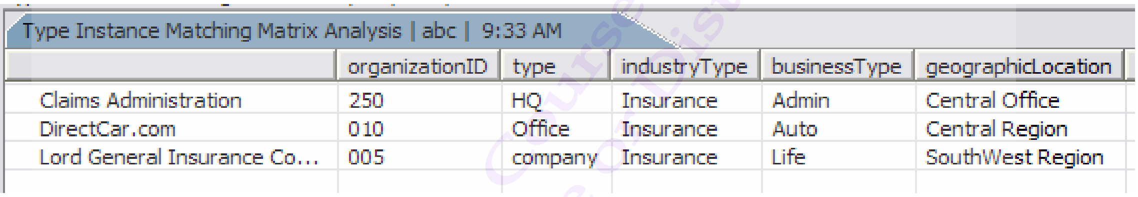
Figure 7-11. General analysis VB1841.0

Notes:

Type instance matching matrix analysis

- **Type instance matching matrix analysis** shows all the instances of a particular model element that provides a type definition.
  - –Displays a row for each instance matching the selected type:
    - The first column in the row indicates the instance name.
    - Remaining columns indicate the values of the instance attributes.
- For example, all the elements that match the type “Organization”:



Type Instance Matching Matrix Analysis | abc | 9:33 AM

	organizationID	type	industryType	businessType	geographicLocation
Claims Administration	250	HQ	Insurance	Admin	Central Office
DirectCar.com	010	Office	Insurance	Auto	Central Region
Lord General Insurance Co...	005	company	Insurance	Life	SouthWest Region

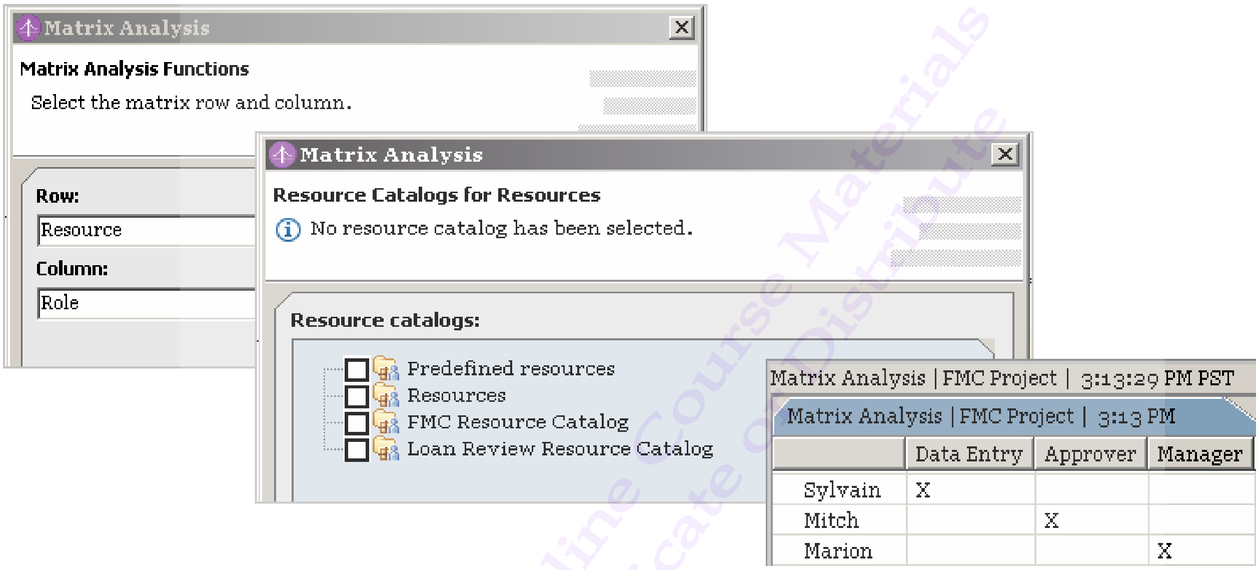
Figure 7-12. Type instance matching matrix analysis

VB1841.0

Notes:

Matrix analysis

- Shows the association of a row object (resource) with a column object (role)
  - Resource role matrix analysis shows the relation between the resources and their roles
- Invoked from a context menu in the project tree
- User prompted by a wizard to select the row and column attributes of matrix
- Wizard enables user to select the required models for the selected attributes
- The analysis results are shown in a tabular view and can be printed



Matrix Analysis Functions

Select the matrix row and column.

Row: Resource

Column: Role

Resource Catalogs for Resources

No resource catalog has been selected.

Resource catalogs:

- ☐ Predefined resources
- ☐ Resources
- ☐ FMC Resource Catalog
- ☐ Loan Review Resource Catalog

Matrix Analysis | FMC Project | 3:13:29 PM PST

Matrix Analysis | FMC Project | 3:13 PM

	Data Entry	Approver	Manager
Sylvain	X		
Mitch		X	
Marion			X

Figure 7-13. Matrix analysis VB1841.0

Notes:

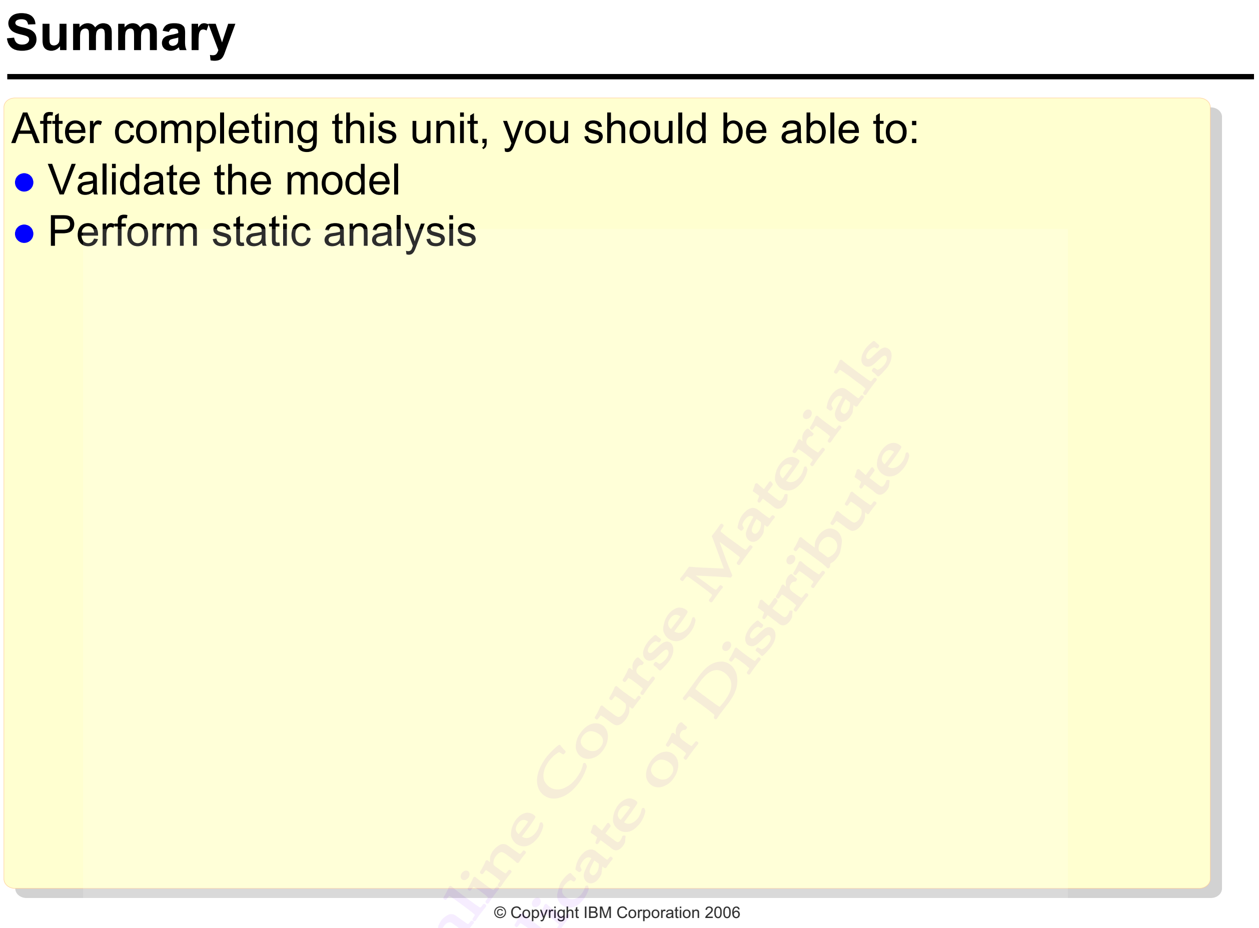
Matrix analysis shows the association of a row object (resource) with a column object (role).

- The resource role matrix analysis shows the relation between the resources and their roles.

It is invoked from a context menu in the project tree.

- The user is prompted by a wizard to select the row and column attributes of matrix.
- The wizard enables the user to select the required models for the selected attributes.

The analysis results are shown in a tabular view and can be printed.



Summary

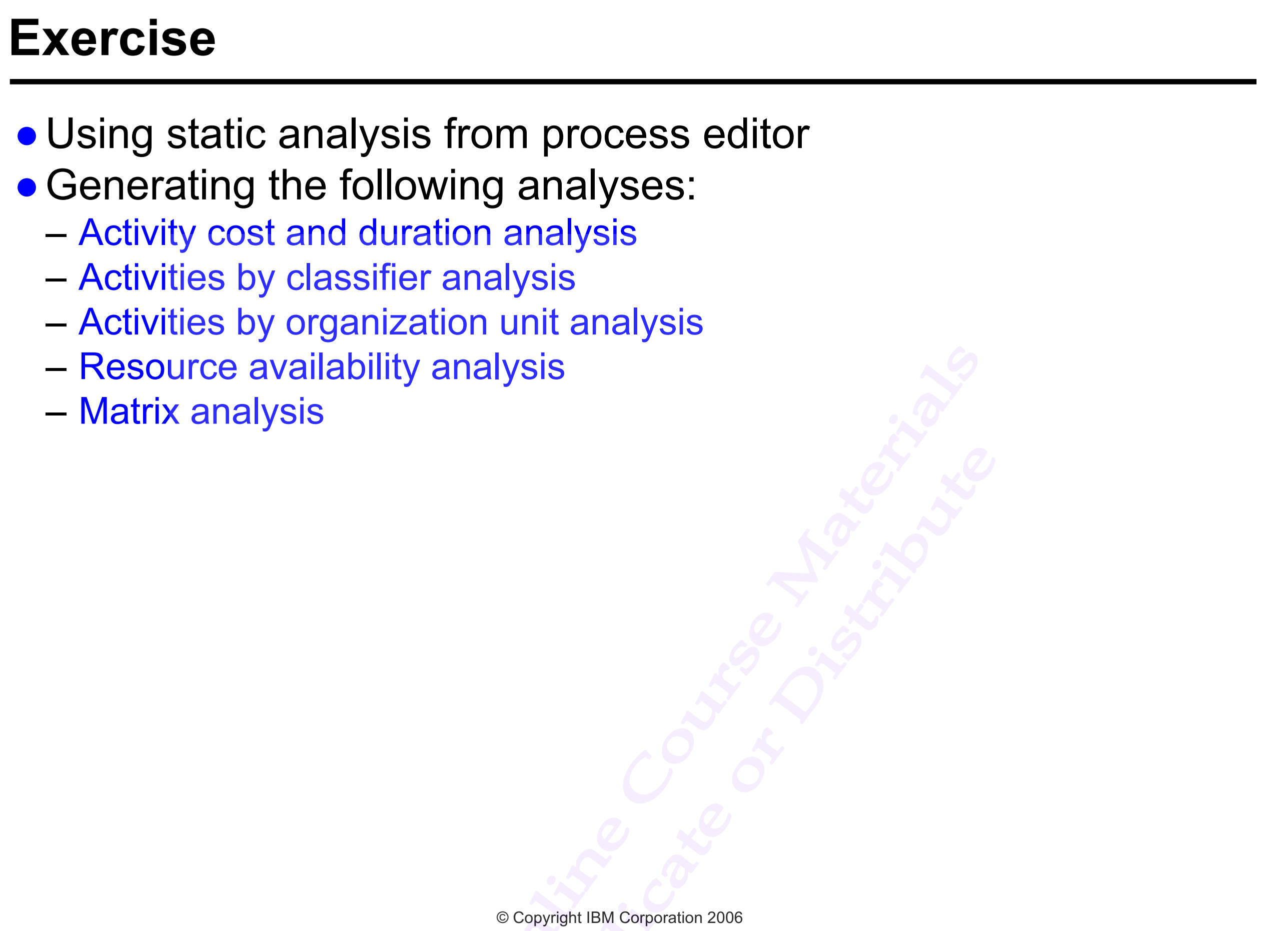
After completing this unit, you should be able to:

- Validate the model
- Perform static analysis

Figure 7-14. Summary

VB1841.0

Notes:



Exercise

- Using static analysis from process editor
- Generating the following analyses:
  - Activity cost and duration analysis
  - Activities by classifier analysis
  - Activities by organization unit analysis
  - Resource availability analysis
  - Matrix analysis

Figure 7-15. Exercise VB1841.0

Notes:

Review questions

- What are the four fundamentals of the model validation?
- What is activity unable to start analysis?
- What is activities by classifier analysis?
- What is matrix analysis?

Figure 7-16. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 8. Basic reports and queries

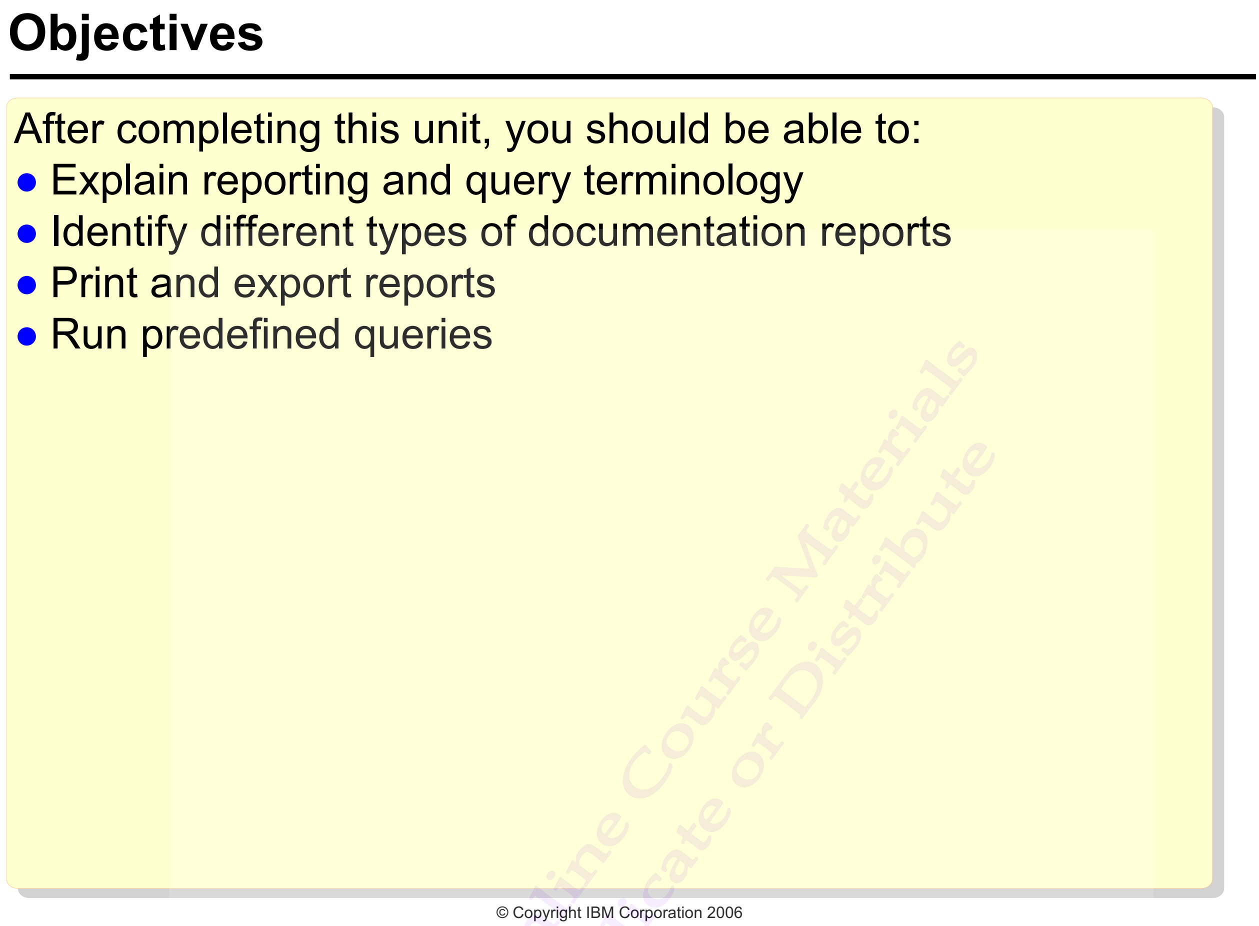
What this unit is about

This unit describes basic reports and queries.

What you should be able to do

After completing this unit, you should be able to:

- Define reporting and query terminology
- Identify different types of documentation reports
- Print and export reports
- Run predefined queries



Objectives

After completing this unit, you should be able to:

- Explain reporting and query terminology
- Identify different types of documentation reports
- Print and export reports
- Run predefined queries

Figure 8-1. Objectives

VB1841.0

Notes:

Querying, reporting, and printing

- Queries enable you to extract and view selected information on elements of your models.
- Reports are a formatted presentation of information relating to a model or to the results of analyzing a process simulation.
- Reports can be viewed online, printed, or exported to PDF format.
- Reports versus queries
  - All predefined queries have a corresponding predefined report based on the query.
    - Use the query to view the information.
    - Use the report if you want to format, print, or save the information.
- Diagrams can also be printed or exported.

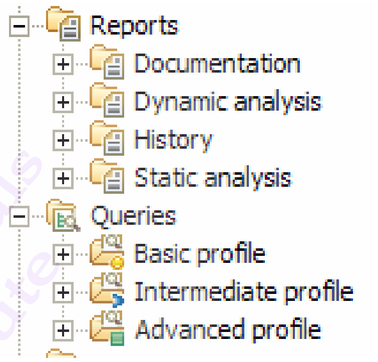
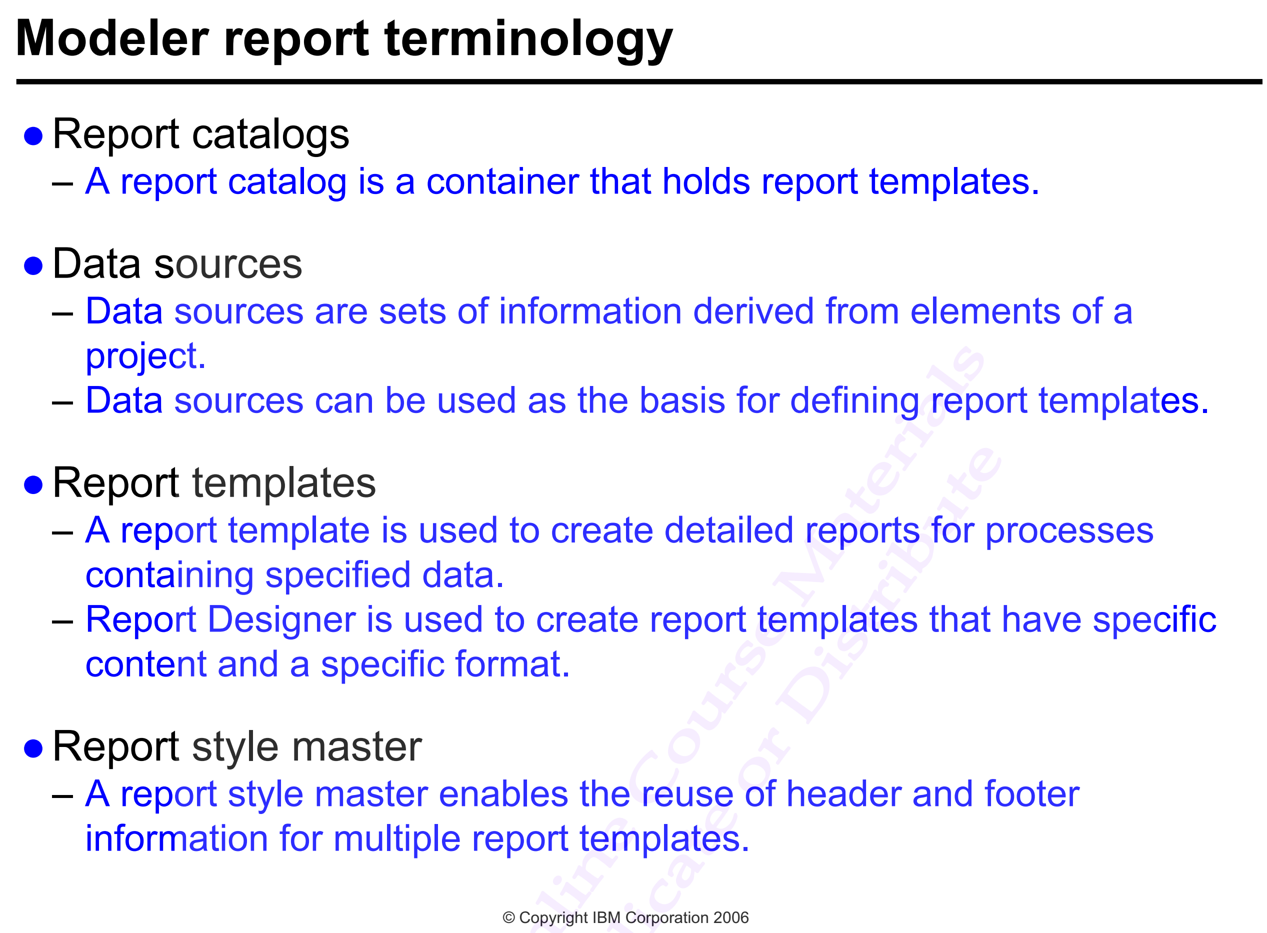


Figure 8-2. Querying, reporting, and printing VB1841.0

Notes:

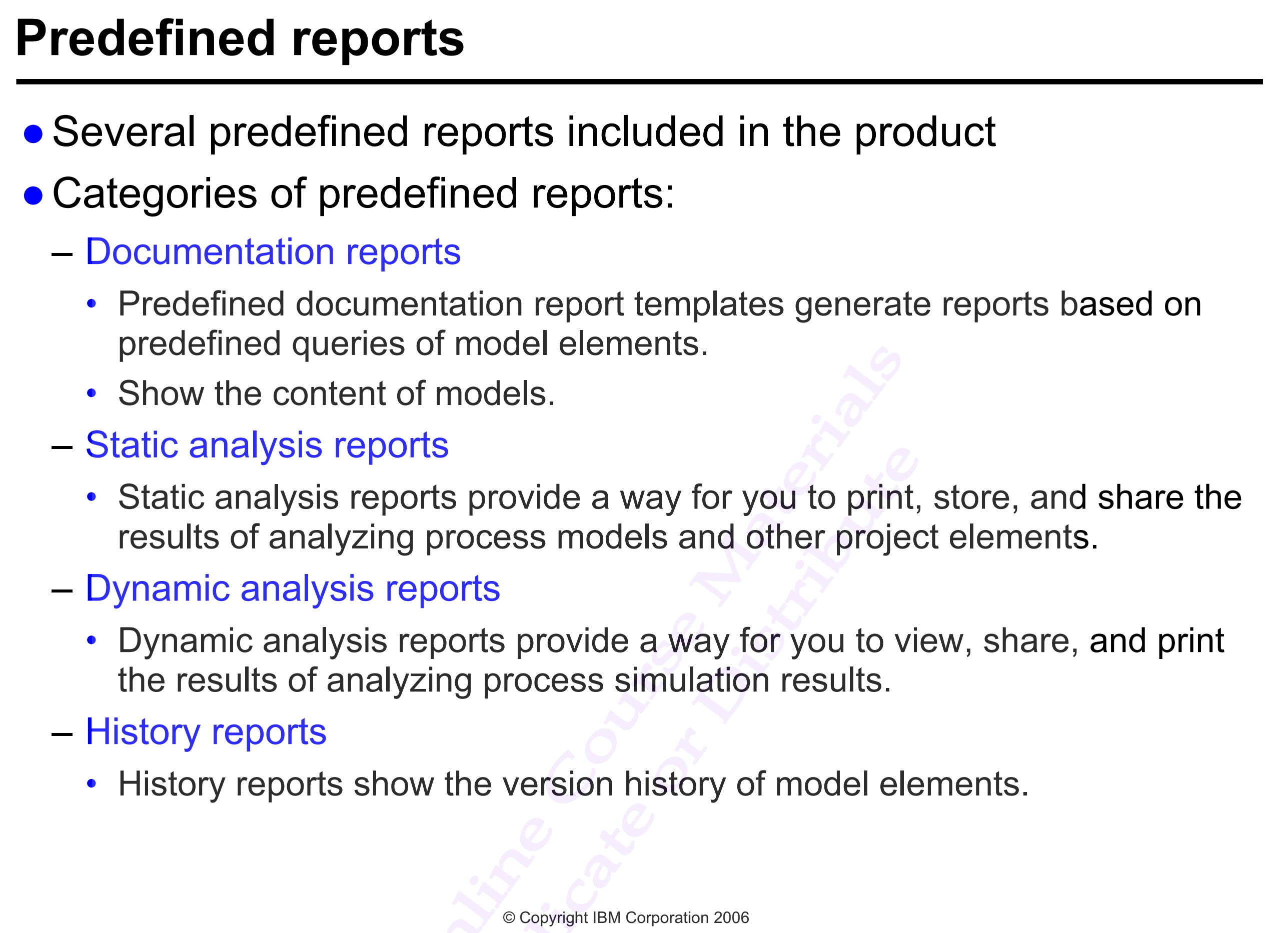


Modeler report terminology

- Report catalogs
  - A report catalog is a container that holds report templates.
- Data sources
  - Data sources are sets of information derived from elements of a project.
  - Data sources can be used as the basis for defining report templates.
- Report templates
  - A report template is used to create detailed reports for processes containing specified data.
  - Report Designer is used to create report templates that have specific content and a specific format.
- Report style master
  - A report style master enables the reuse of header and footer information for multiple report templates.

Figure 8-3. Modeler report terminology VB1841.0

Notes:



Predefined reports

- Several predefined reports included in the product
- Categories of predefined reports:
  - Documentation reports
    - Predefined documentation report templates generate reports based on predefined queries of model elements.
    - Show the content of models.
  - Static analysis reports
    - Static analysis reports provide a way for you to print, store, and share the results of analyzing process models and other project elements.
  - Dynamic analysis reports
    - Dynamic analysis reports provide a way for you to view, share, and print the results of analyzing process simulation results.
  - History reports
    - History reports show the version history of model elements.

Figure 8-4. Predefined reports VB1841.0

Notes:

Documentation reports

- Predefined documentation report templates quickly generate reports based on predefined queries of model elements.
  - Documentation reports show the content of models.
- Documentation report types:
  - Statistics reports
    - Show the number of each element associated to the selected model element
  - Details reports
    - Show the other types of elements, such as resources, roles, organization units, locations, and business items that are associated with the selected element
  - Specification reports
    - Show the values contained in the specification of the selected element
- Documentation report categories:
  - Process reports
    - Extract information on processes, tasks, services, and repositories
  - Data reports
    - Extract information on business items and notifications
  - Resource reports
    - Extract information on resources, roles, and timetables
  - Organization reports
    - Extract information on the contents of organizations and locations

Figure 8-5. Documentation reports VB1841.0

Notes:

Creating a report from the diagram

- Detailed process summary report
  - Supports the diagram with complete documentation
  - Displays summary information for the selected process
- The report includes:
  - The process diagram
  - Process specification
  - Specifications of each element contained in the process

Model Specification

Detailed Process Summary

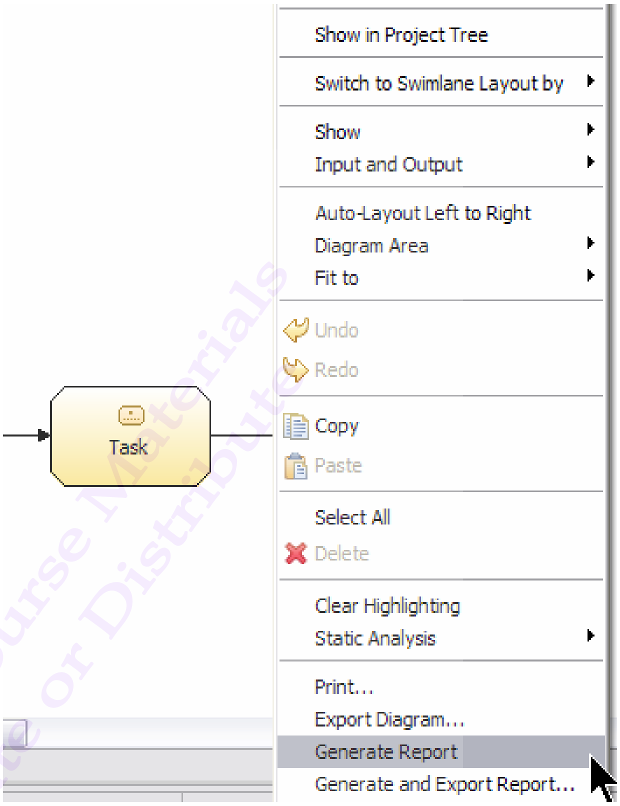
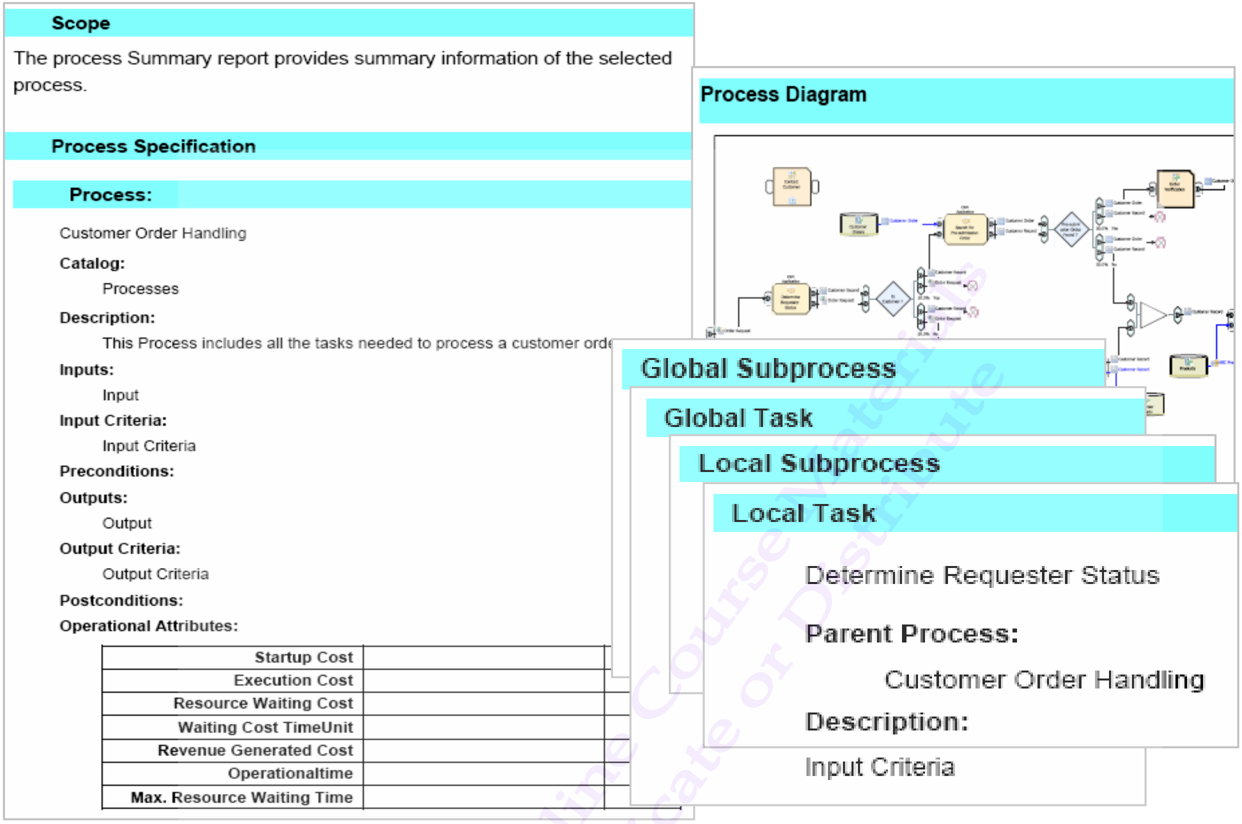


Figure 8-6. Creating a report from the diagram VB1841.0

Notes:

Detailed process summary



Scope

The process Summary report provides summary information of the selected process.

Process Specification

Process:

Customer Order Handling

Catalog:

Processes

Description:

This Process includes all the tasks needed to process a customer orde

Inputs:

Input

Input Criteria:

Input Criteria

Preconditions:

Outputs:

Output

Output Criteria:

Output Criteria

Postconditions:

Operational Attributes:

Startup Cost	
Execution Cost	
Resource Waiting Cost	
Waiting Cost TimeUnit	
Revenue Generated Cost	
Operationaltime	
Max. Resource Waiting Time	

Process Diagram

Global Subprocess

Global Task

Local Subprocess

Local Task

Determine Requester Status

Parent Process:

Customer Order Handling

Description:

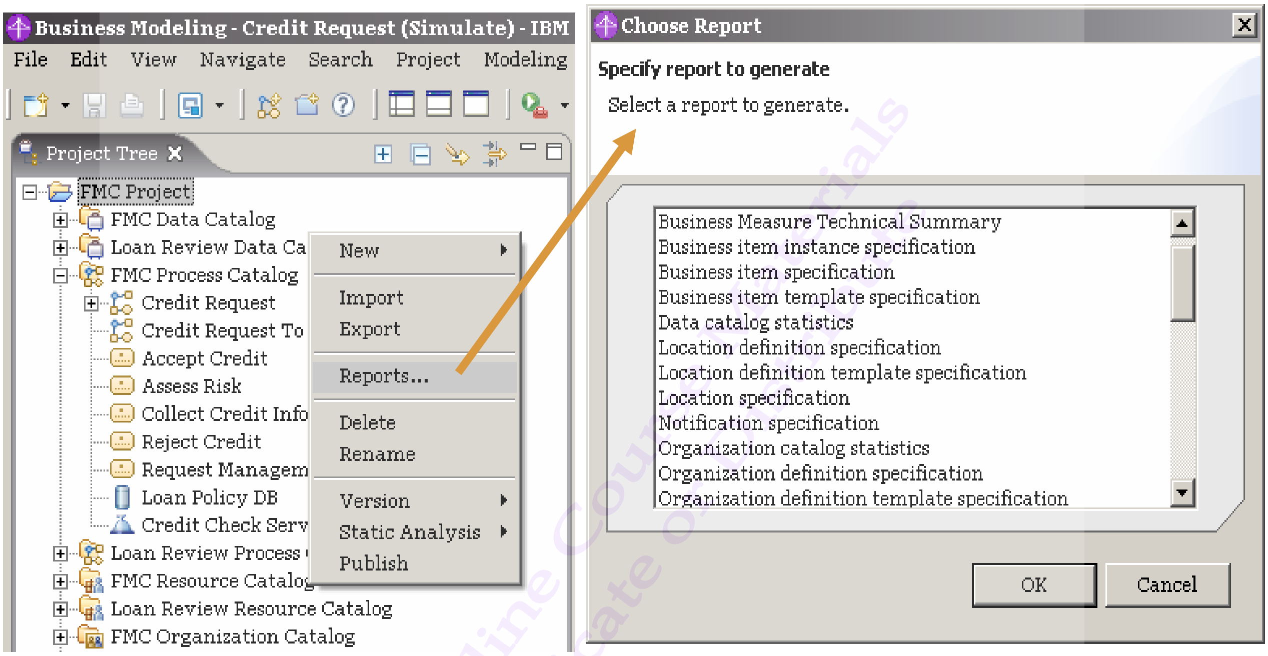
Input Criteria

Figure 8-7. Detailed process summary VB1841.0

Notes:

Creating a report from the Project Tree

- **Selecting a documentation report template**
  - Generate reports that show the content of models or the results of a process simulation or analysis



Specify report to generate

Select a report to generate.

Business Measure Technical Summary
Business item instance specification
Business item specification
Business item template specification
Data catalog statistics
Location definition specification
Location definition template specification
Location specification
Notification specification
Organization catalog statistics
Organization definition specification
Organization definition template specification

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Figure 8-8. Creating a report from the Project Tree VB1841.0

Notes:

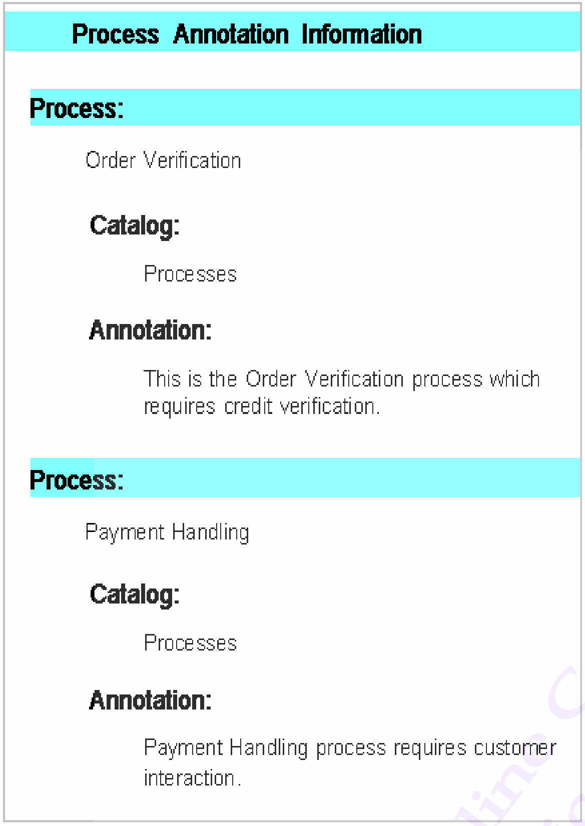
Process reports — process

- Process annotation report
  - Displays the complete text of all annotations contained in a process or in multiple processes in a process catalog
- Process details report
  - Displays the names of elements contained in a process or in multiple processes in a process catalog
- Process level details report
  - Contains details about a main process and all of its component activities and subprocesses
- Process procedure report
  - Shows the sequence of steps within a process, and the relationships of a process to other processes
- Process specification report
  - Shows the information contained in a process specification
- Process statistics report
  - Displays the quantities of elements contained in a process or in multiple processes in a process catalog

Figure 8-9. Process reports — process VB1841.0

Notes:

Process annotation report



Process Annotation Information

Process:

Order Verification

Catalog:

Processes

Annotation:

This is the Order Verification process which requires credit verification.

Process:

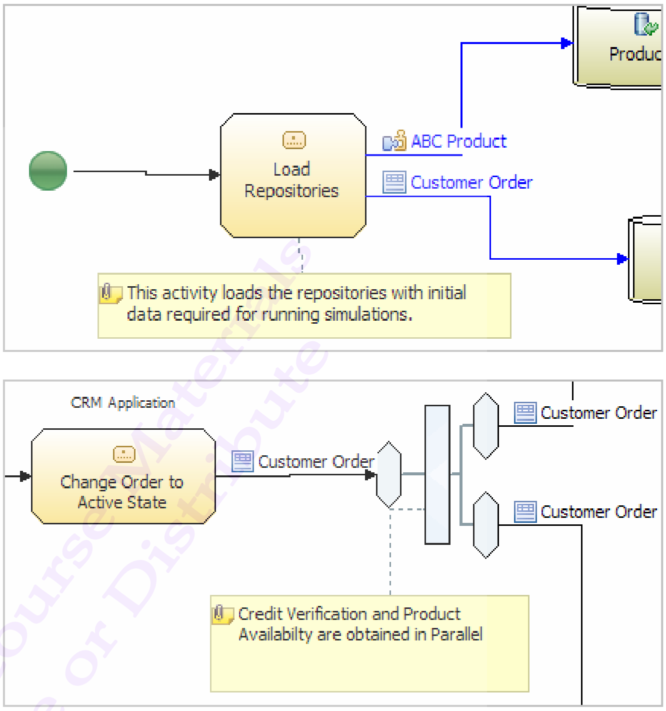
Payment Handling

Catalog:

Processes

Annotation:

Payment Handling process requires customer interaction.



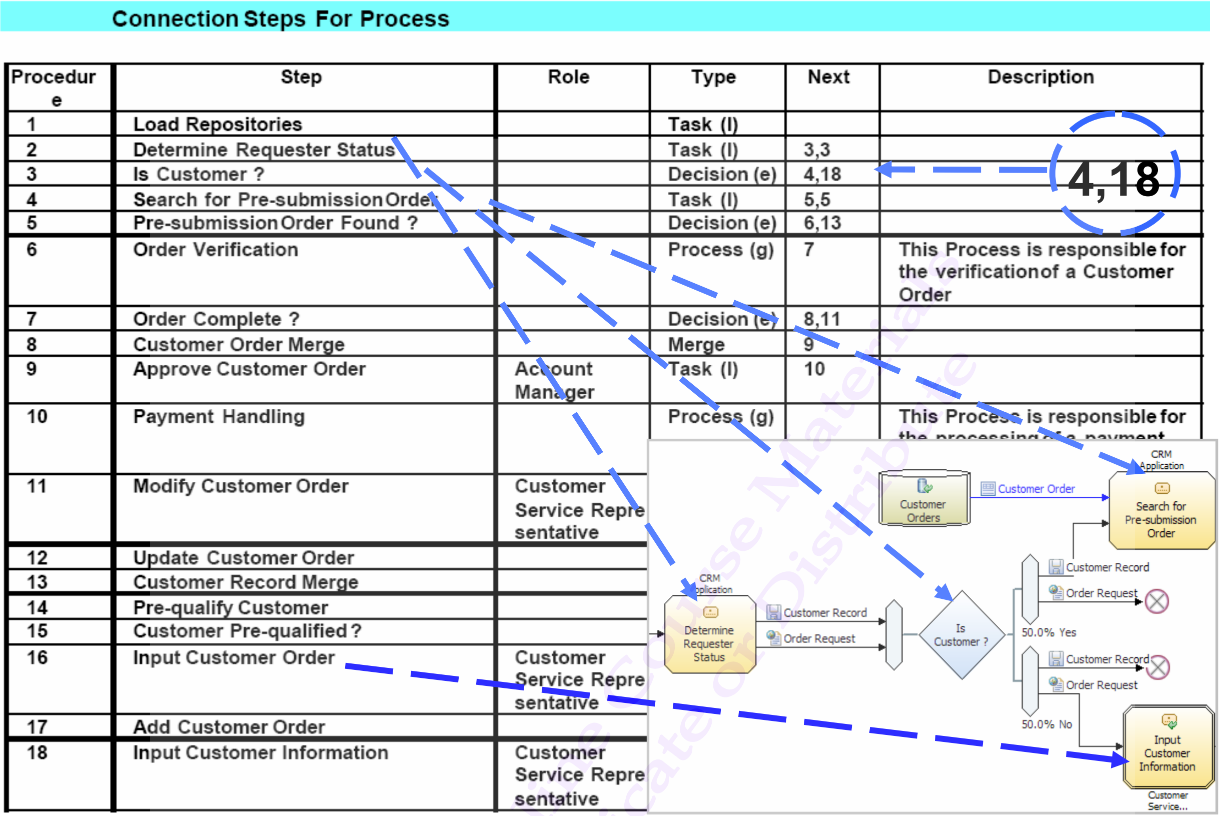
This activity loads the repositories with initial data required for running simulations.

Credit Verification and Product Availabilty are obtained in Parallel

Figure 8-10. Process annotation report VB1841.0

Notes:

Process procedure report



Connection Steps For Process

Procedure	Step	Role	Type	Next	Description
1	Load Repositories		Task (l)		
2	Determine Requester Status		Task (l)	3,3	
3	Is Customer ?		Decision (e)	4,18	
4	Search for Pre-submission Order		Task (l)	5,5	
5	Pre-submission Order Found ?		Decision (e)	6,13	
6	Order Verification		Process (g)	7	This Process is responsible for the verification of a Customer Order
7	Order Complete ?		Decision (e)	8,11	
8	Customer Order Merge		Merge	9	
9	Approve Customer Order	Account Manager	Task (l)	10	
10	Payment Handling		Process (g)		This Process is responsible for the processing of a payment
11	Modify Customer Order	Customer Service Representative			
12	Update Customer Order				
13	Customer Record Merge				
14	Pre-qualify Customer				
15	Customer Pre-qualified ?				
16	Input Customer Order	Customer Service Representative			
17	Add Customer Order				
18	Input Customer Information	Customer Service Representative			

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Figure 8-11. Process procedure report VB1841.0

Self-Paced Course Materials
Do Not Duplicate or Distribute

Notes:

Legend:

(l) Local

(g) Global

(e) Exempt

Process level details report

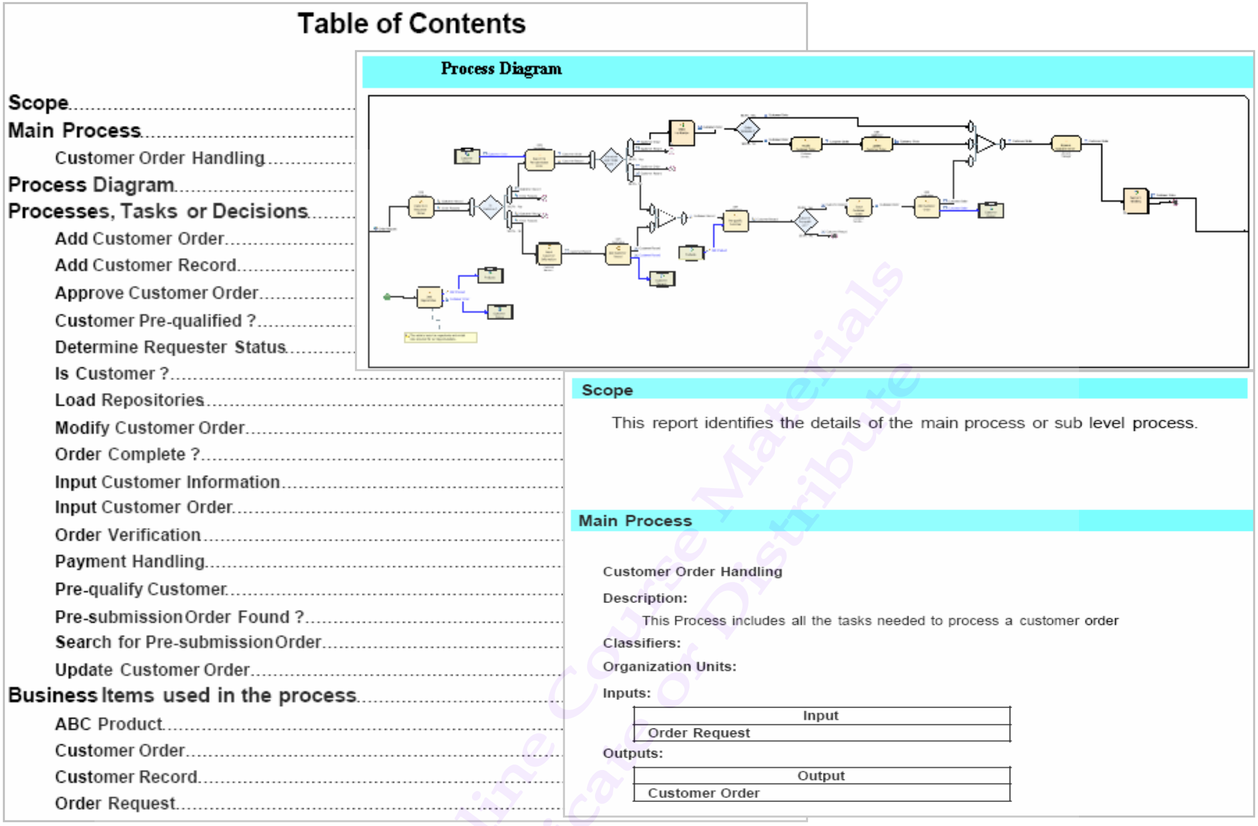

Table of Contents

Scope
Main Process
  Customer Order Handling
Process Diagram
Processes, Tasks or Decisions
  Add Customer Order
  Add Customer Record
  Approve Customer Order
  Customer Pre-qualified ?
  Determine Requester Status
  Is Customer ?
  Load Repositories
  Modify Customer Order
  Order Complete ?
  Input Customer Information
  Input Customer Order
  Order Verification
  Payment Handling
  Pre-qualify Customer
  Pre-submission Order Found ?
  Search for Pre-submission Order
  Update Customer Order
Business Items used in the process
  ABC Product
  Customer Order
  Customer Record
  Order Request

Process Diagram

Scope

This report identifies the details of the main process or sub level process.

Main Process

Customer Order Handling

Description:

This Process includes all the tasks needed to process a customer order

Classifiers:

Organization Units:

Inputs:

Input
Order Request

Outputs:

Output
Customer Order

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Figure 8-12. Process level details report VB1841.0

Notes:

The process level details report contains details about a main process and all of its component activities and subprocesses.

For each process or activity, this report lists the following:

- Activity type
- Description
- Classifiers
- Organization Units
- Roles
- Inputs
- Outputs

The report also lists the business items used in the process, the attributes of the business item, and which activities use the business item.

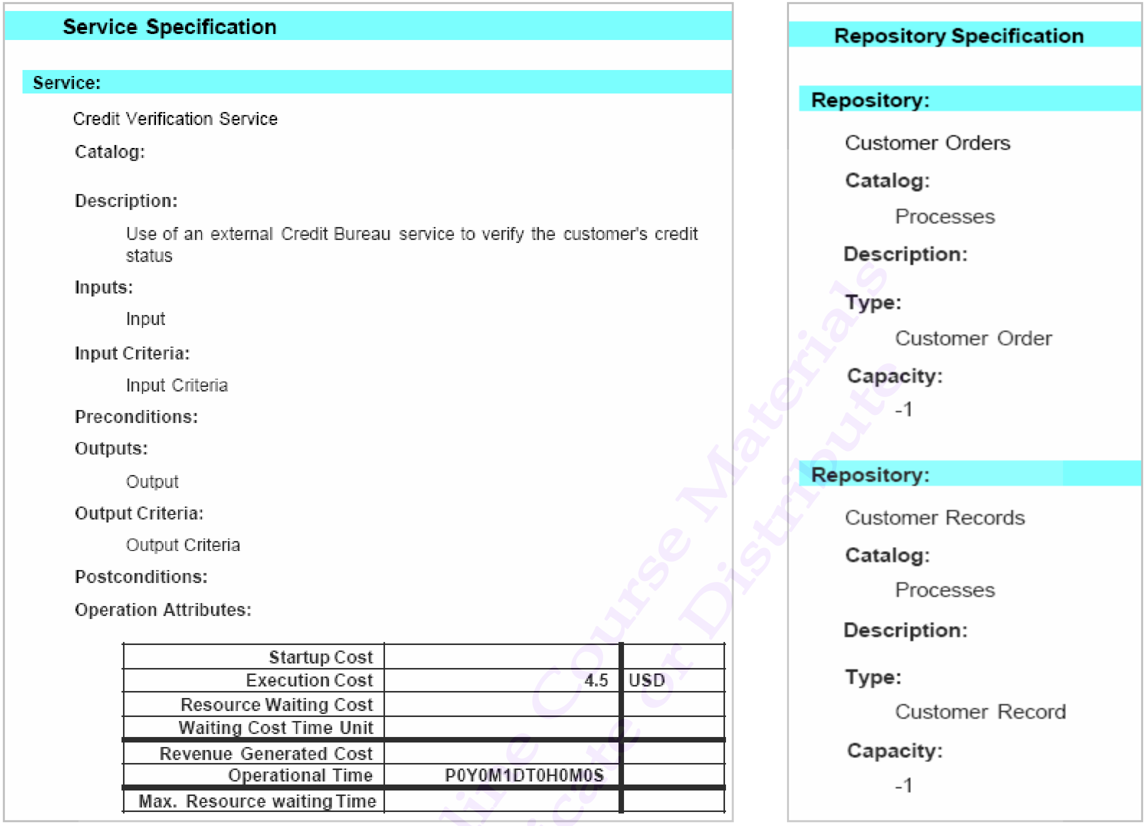
Process reports — repository and service

- Repository specification report
  - Shows the information contained in a repository specification
- Service details report
  - Displays the names of elements contained in a service or in multiple services in a process catalog
- Service specification report
  - Shows the information contained in a service specification
- Service statistics report
  - Displays the quantities of elements contained in a service or in multiple services in a process catalog

Figure 8-13. Process reports — repository and service VB1841.0

Notes:

Service and repository specification reports



Service Specification

Service:

Credit Verification Service

Catalog:

Description:

Use of an external Credit Bureau service to verify the customer's credit status

Inputs:

Input

Input Criteria:

Input Criteria

Preconditions:

Outputs:

Output

Output Criteria:

Output Criteria

Postconditions:

Operation Attributes:

Startup Cost		
Execution Cost	4.5	USD
Resource Waiting Cost		
Waiting Cost Time Unit		
Revenue Generated Cost		
Operational Time	P0Y0M1DT0H0M0S	
Max. Resource waiting Time		

Repository Specification

Repository:

Customer Orders

Catalog:

Processes

Description:

Type:

Customer Order

Capacity:

-1

Repository:

Customer Records

Catalog:

Processes

Description:

Type:

Customer Record

Capacity:

-1

Figure 8-14. Service and repository specification reports VB1841.0

Notes:

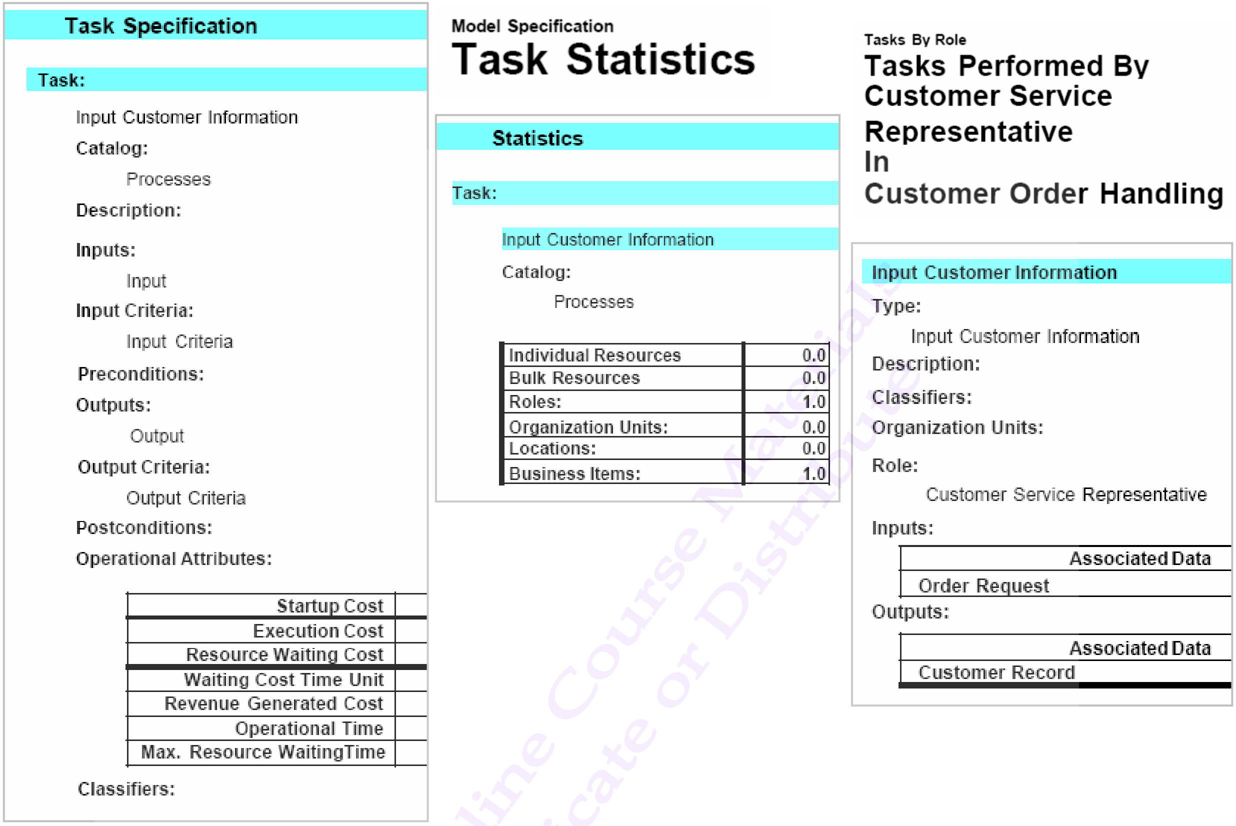
Process reports — task

- Task details report
  - Displays the names of elements contained in a task or in multiple tasks in a process catalog
- Tasks by role report
  - Identifies all the tasks in a process that are performed by a specified role
- Task specification report
  - Shows the information contained in a task specification
- Task statistics report
  - Displays the quantities of elements contained in a task or in multiple tasks in a task catalog

Figure 8-15. Process reports — task VB1841.0

Notes:

Task specification, statistics, by role



Task Specification

Task:

Input Customer Information

Catalog:

Processes

Description:

Inputs:

Input

Input Criteria:

Input Criteria

Preconditions:

Outputs:

Output

Output Criteria:

Output Criteria

Postconditions:

Operational Attributes:

Startup Cost	
Execution Cost	
Resource Waiting Cost	
Waiting Cost Time Unit	
Revenue Generated Cost	
Operational Time	
Max. Resource WaitingTime	

Classifiers:

Model Specification

Task Statistics

Statistics

Task:

Input Customer Information

Catalog:

Processes

Individual Resources	0.0
Bulk Resources	0.0
Roles:	1.0
Organization Units:	0.0
Locations:	0.0
Business Items:	1.0

Tasks By Role

Tasks Performed By Customer Service Representative In Customer Order Handling

Input Customer Information

Type:

Input Customer Information

Description:

Classifiers:

Organization Units:

Role:

Customer Service Representative

Inputs:

Associated Data
Order Request

Outputs:

Associated Data
Customer Record

Figure 8-16. Task specification, statistics, by role

VB1841.0

Notes:

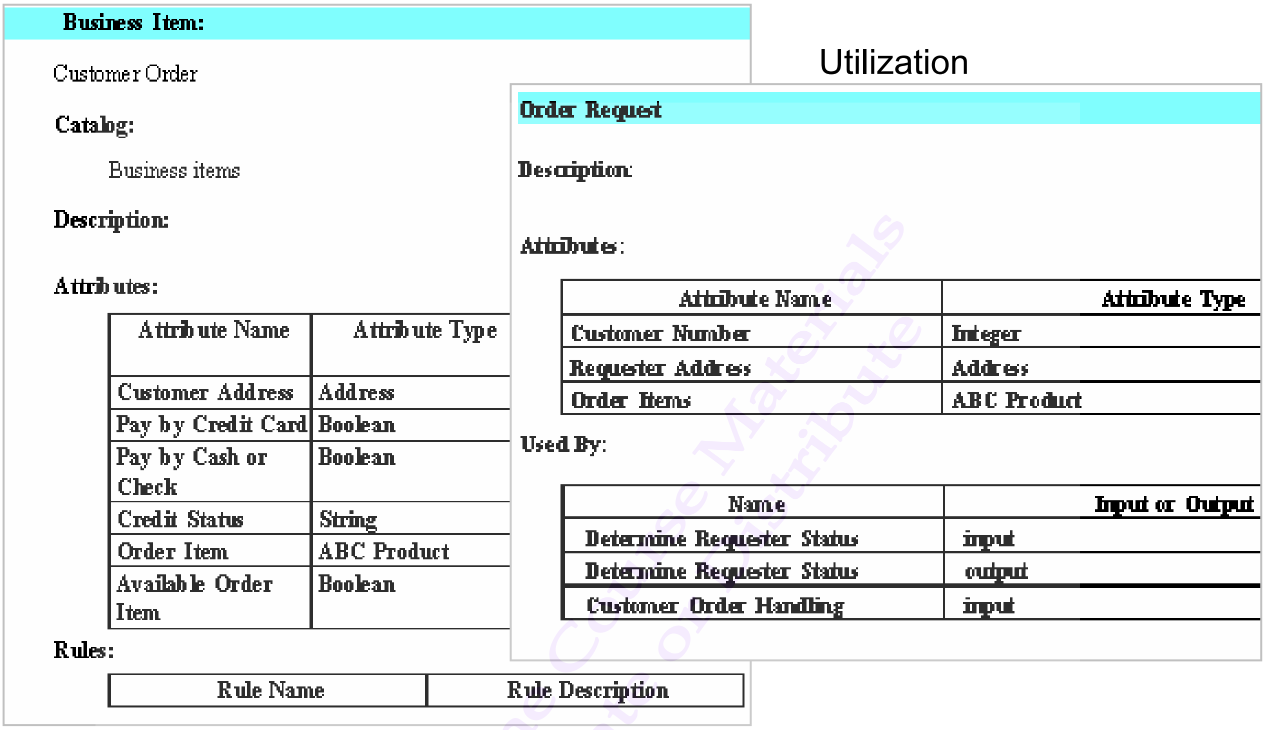
Data reports

- Business item instance specification report
  - The business item instance specification report details the attributes of each business item instance in a model.
- Business item specification report
  - The business item specification report shows the information contained in a business item specification.
- Business item template specification report
  - The business item template specification report identifies the attributes of each business item template in the model.
- Business item utilization report
  - The business item utilization report identifies all the business items in a model, including information about the utilization of each business item.
- Data catalog statistics report
  - The data catalog statistics report displays the quantities of elements contained in a data catalog that you select for inclusion in the report.
- Notification specification report
  - The notification specification report shows the information contained in a notification specification.

Figure 8-17. Data reports VB1841.0

Notes:

Business item specification and utilization reports



Specification

Business Item:

Customer Order

Catalog:

Business items

Description:

Attributes:

Attribute Name	Attribute Type
Customer Address	Address
Pay by Credit Card	Boolean
Pay by Cash or Check	Boolean
Credit Status	String
Order Item	ABC Product
Available Order Item	Boolean

Rules:

Rule Name	Rule Description

Utilization

Order Request

Description:

Attributes:

Attribute Name	Attribute Type
Customer Number	Integer
Requester Address	Address
Order Items	ABC Product

Used By:

Name	Input or Output
Determine Requester Status	input
Determine Requester Status	output
Customer Order Handling	input

Figure 8-18. Business item specification and utilization reports VB1841.0

Notes:

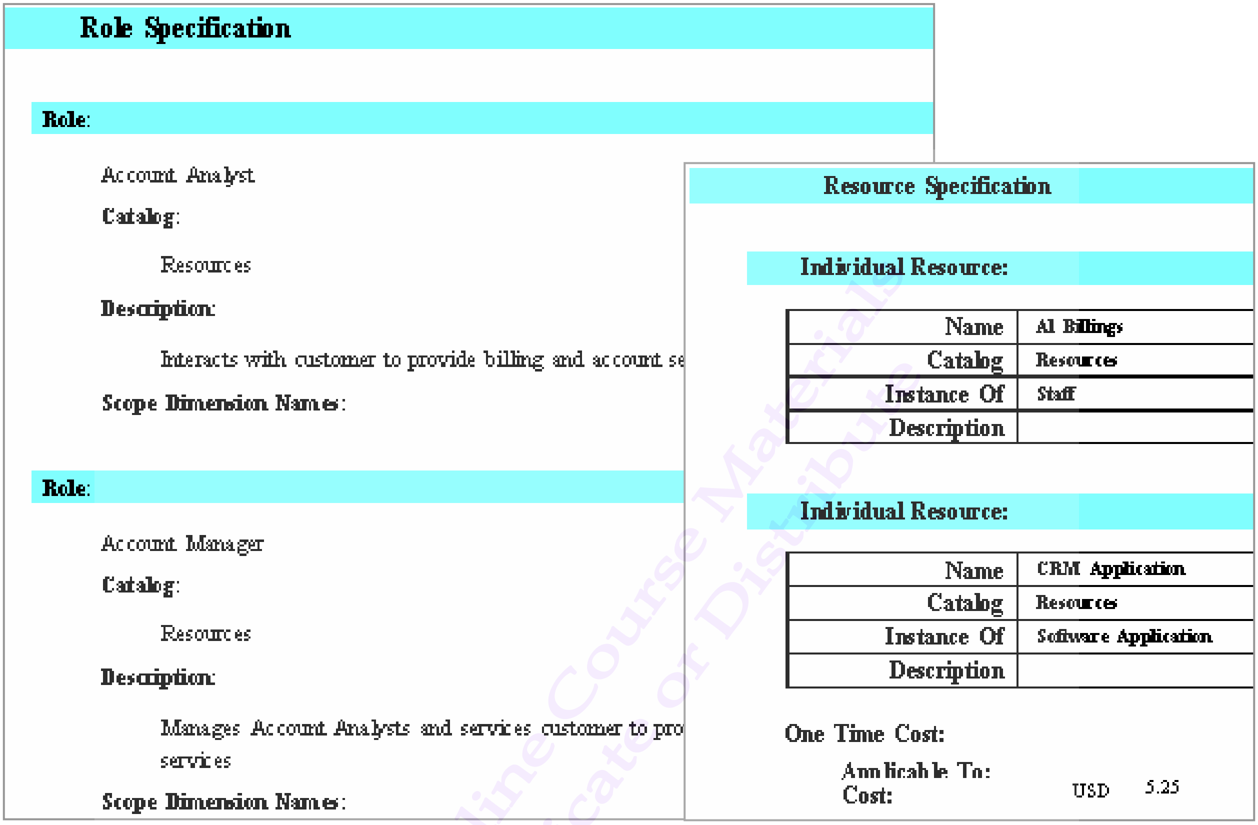
Resource reports

- Resource catalog statistics report
  - The resource catalog statistics report displays the quantities of elements contained in a resource catalog that you select for inclusion in the report.
- Resource specification report
  - The resource specification report shows the information contained in a resource specification.
- Role specification report
  - The role specification report shows the information contained in a role specification.
- Timetable specification report
  - The timetable specification report shows the information contained in a timetable specification.

Figure 8-19. Resource reports

Notes:

Role and resource specification



Role Specification

Role:

Account Analyst

Catalog:

Resources

Description:

Interacts with customer to provide billing and account se

Scope Dimension Names:

Role:

Account Manager

Catalog:

Resources

Description:

Manages Account Analysts and services customer to pro services

Scope Dimension Names:

Resource Specification

Individual Resource:

Name	Al Billings
Catalog	Resources
Instance Of	Staff
Description	

Individual Resource:

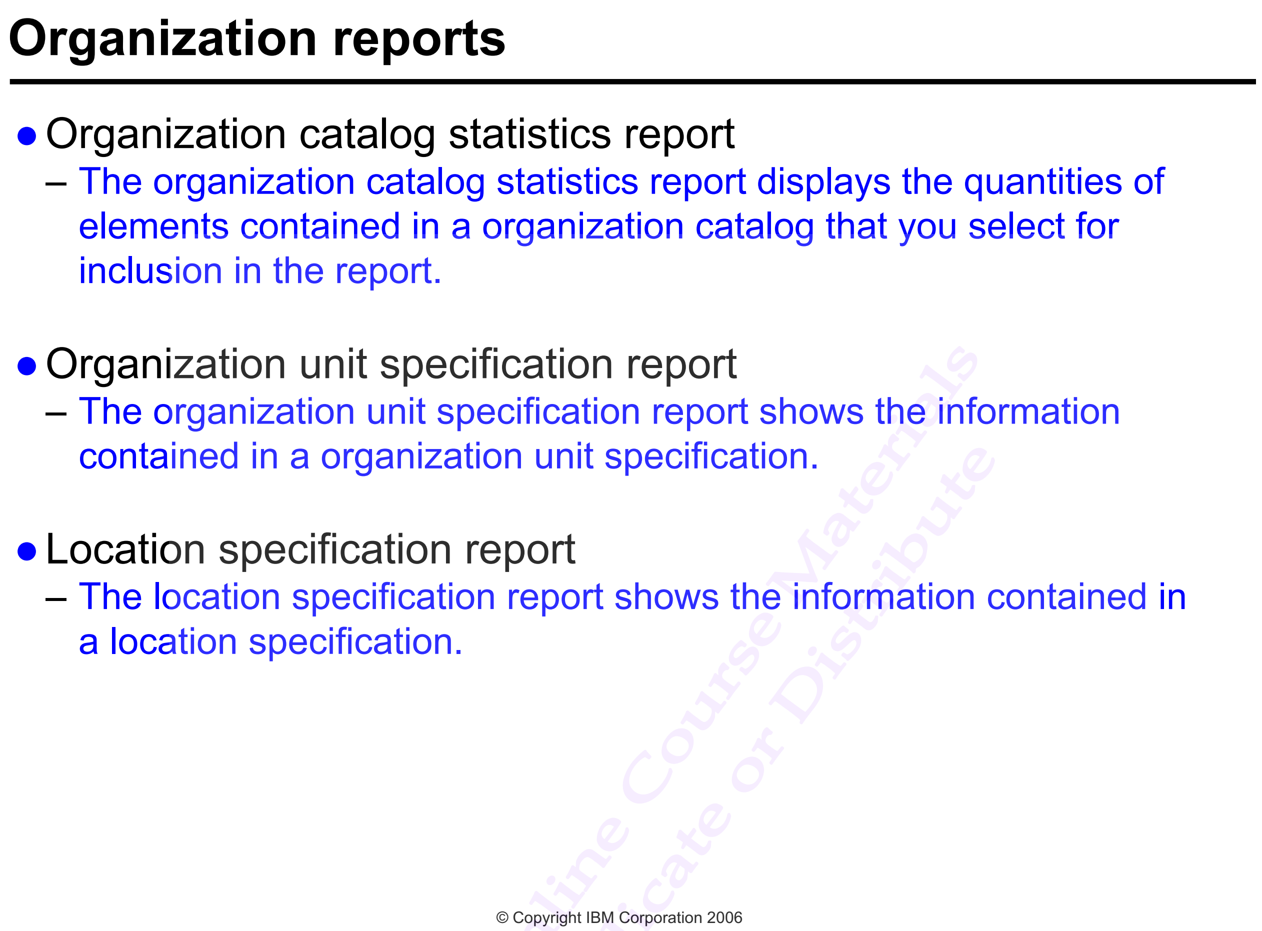
Name	CRM Application
Catalog	Resources
Instance Of	Software Application
Description	

One Time Cost:

Applicable To:
Cost: USD 5.25

Figure 8-20. Role and resource specification VB1841.0

Notes:



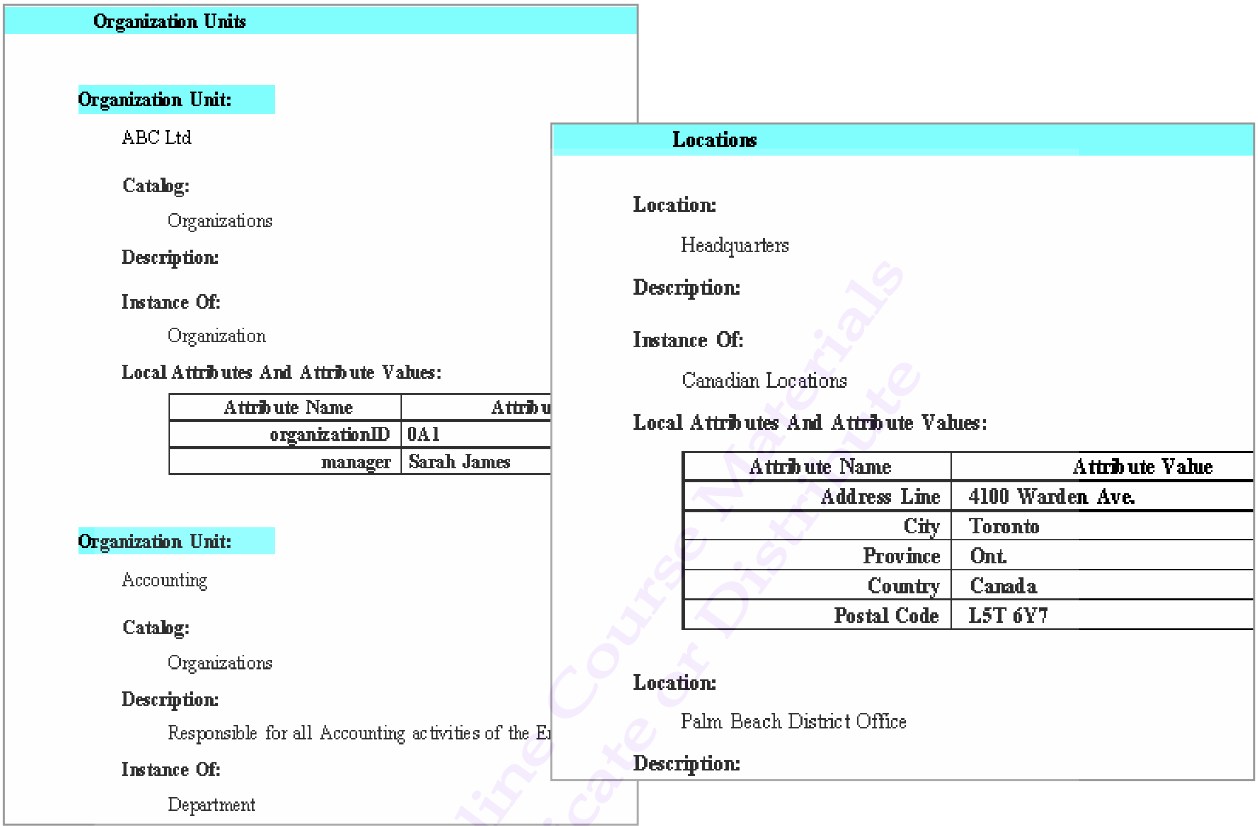
Organization reports

- Organization catalog statistics report
  - The organization catalog statistics report displays the quantities of elements contained in a organization catalog that you select for inclusion in the report.
- Organization unit specification report
  - The organization unit specification report shows the information contained in a organization unit specification.
- Location specification report
  - The location specification report shows the information contained in a location specification.

Figure 8-21. Organization reports VB1841.0

Notes:

Organization unit and location specification



Organization Units

Organization Unit:

ABC Ltd

Catalog:

Organizations

Description:

Instance Of:

Organization

Local Attributes And Attribute Values:

Attribute Name	Attribu
organizationID	0A1
manager	Sarah James

Organization Unit:

Accounting

Catalog:

Organizations

Description:

Responsible for all Accounting activities of the E

Instance Of:

Department

Locations

Location:

Headquarters

Description:

Instance Of:

Canadian Locations

Local Attributes And Attribute Values:

Attribute Name	Attribute Value
Address Line	4100 Warden Ave.
City	Toronto
Province	Ont.
Country	Canada
Postal Code	L5T 6Y7

Location:

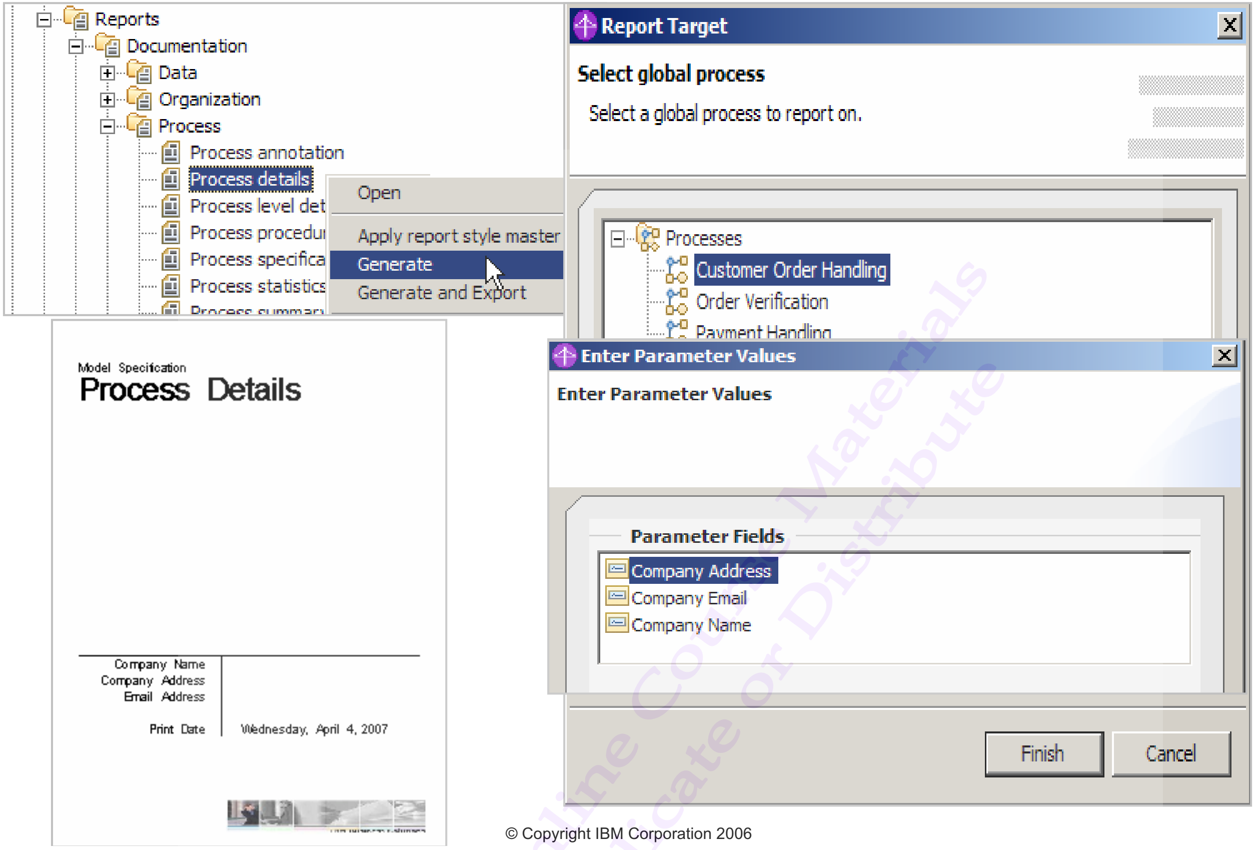
Palm Beach District Office

Description:

Figure 8-22. Organization unit and location specification VB1841.0

Notes:

Generating reports



Report Target

Select global process

Select a global process to report on.

Enter Parameter Values

Enter Parameter Values

Model Specification

Process Details

Company Name
Company Address
Email Address

Print Date Wednesday, April 4, 2007

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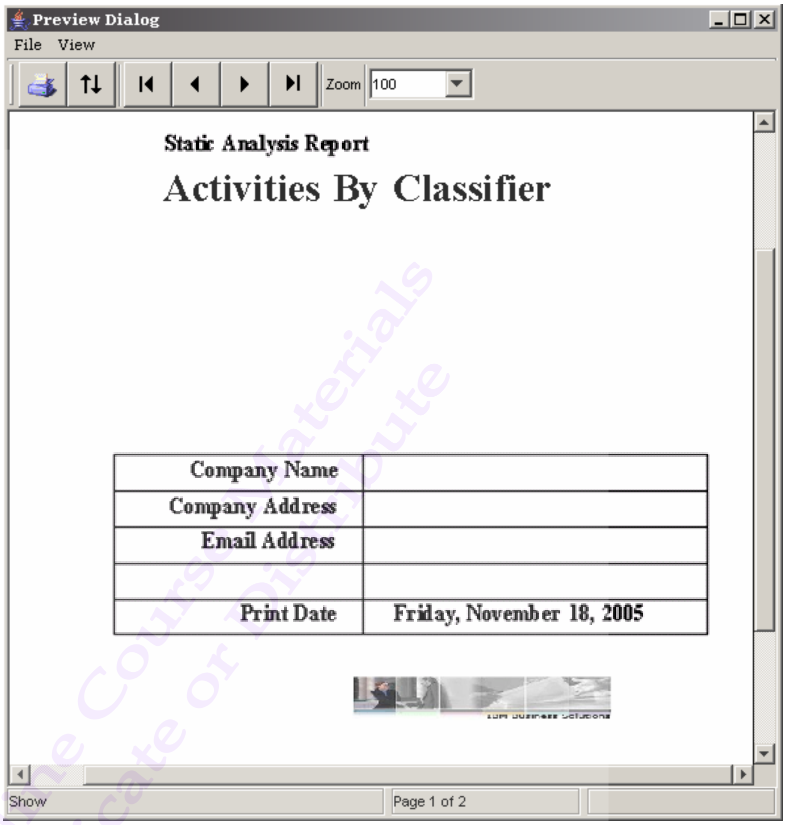
Figure 8-23. Generating reports VB1841.0

Notes:

Printing reports

- Generated reports open in a report viewer for printing.
- Print a report:
  - Click the Print button on the viewer.
  - Or, Select **File → Print** from the menu.
    - A printing dialog will appear.



Static Analysis Report

Activities By Classifier

Company Name	
Company Address	
Email Address	
Print Date	Friday, November 18, 2005

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Figure 8-24. Printing reports VB1841.0

Notes:

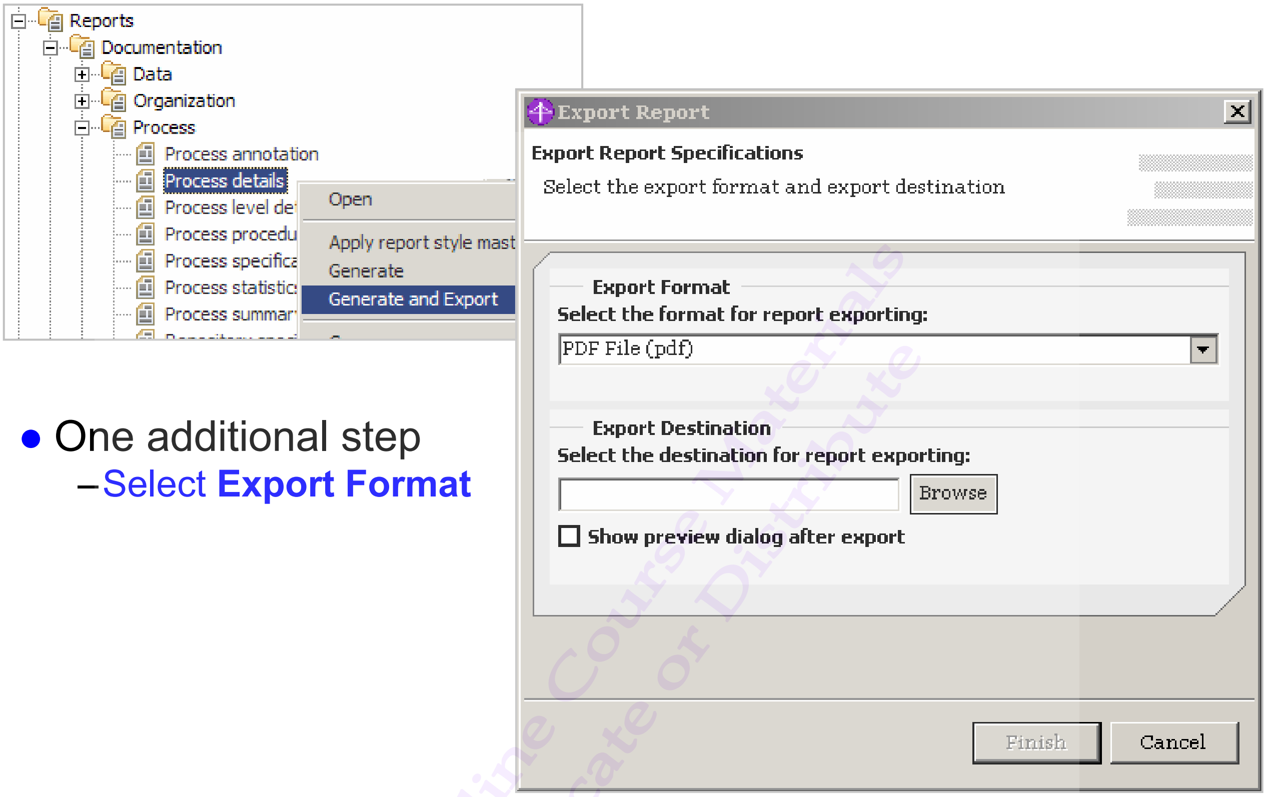
Exporting reports

- Modeler exports reports to a variety of text formats, depending on the intended purpose of the report, for example:
  - HTML to publish report content online
  - SVG format to display process diagrams or other graphical content online
  - PDF format to make printable documents available
  - CSV format to use reports in a spreadsheet

Figure 8-25. Exporting reports VB1841.0

Notes:

Exporting a report



Export Report

Export Report Specifications

Select the export format and export destination

Export Format

Select the format for report exporting:

PDF File (pdf)

Export Destination

Select the destination for report exporting:

Browse

☐ **Show preview dialog after export**

Finish Cancel

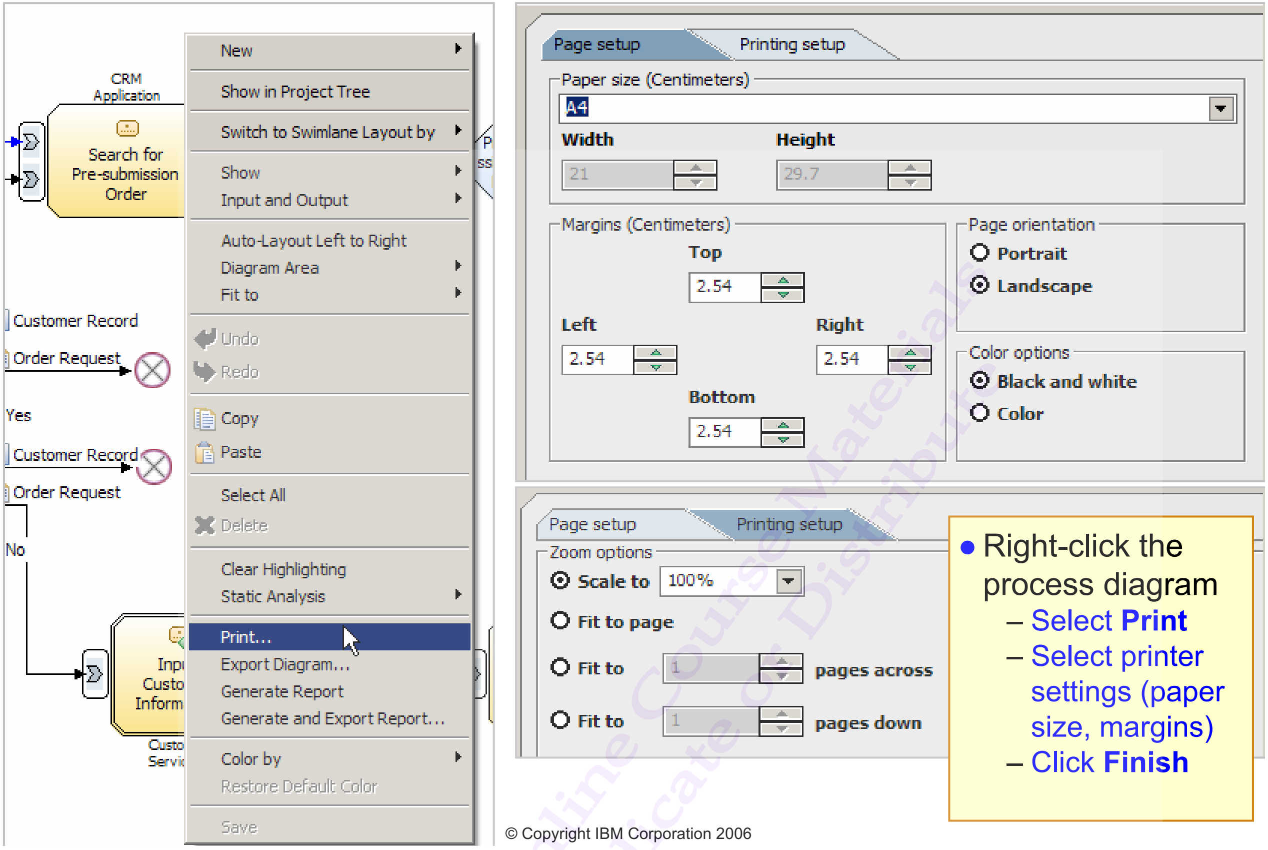
- One additional step
  - Select **Export Format**

Figure 8-26. Exporting a report VB1841.0

Notes:

Exporting reports allows you to deploy the information contained in your models for a variety of purposes and to a variety of different media, including the Web.

Printing a diagram



Paper size (Centimeters): A4

Width: 21 Height: 29.7

Margins (Centimeters)

Top: 2.54

Left: 2.54 Right: 2.54

Bottom: 2.54

Page orientation

○ Portrait

● Landscape

Color options

● Black and white

○ Color

Zoom options

● Scale to 100%

○ Fit to page

○ Fit to 1 pages across

○ Fit to 1 pages down

- Right-click the process diagram
  - Select **Print**
  - Select printer settings (paper size, margins)
  - Click **Finish**

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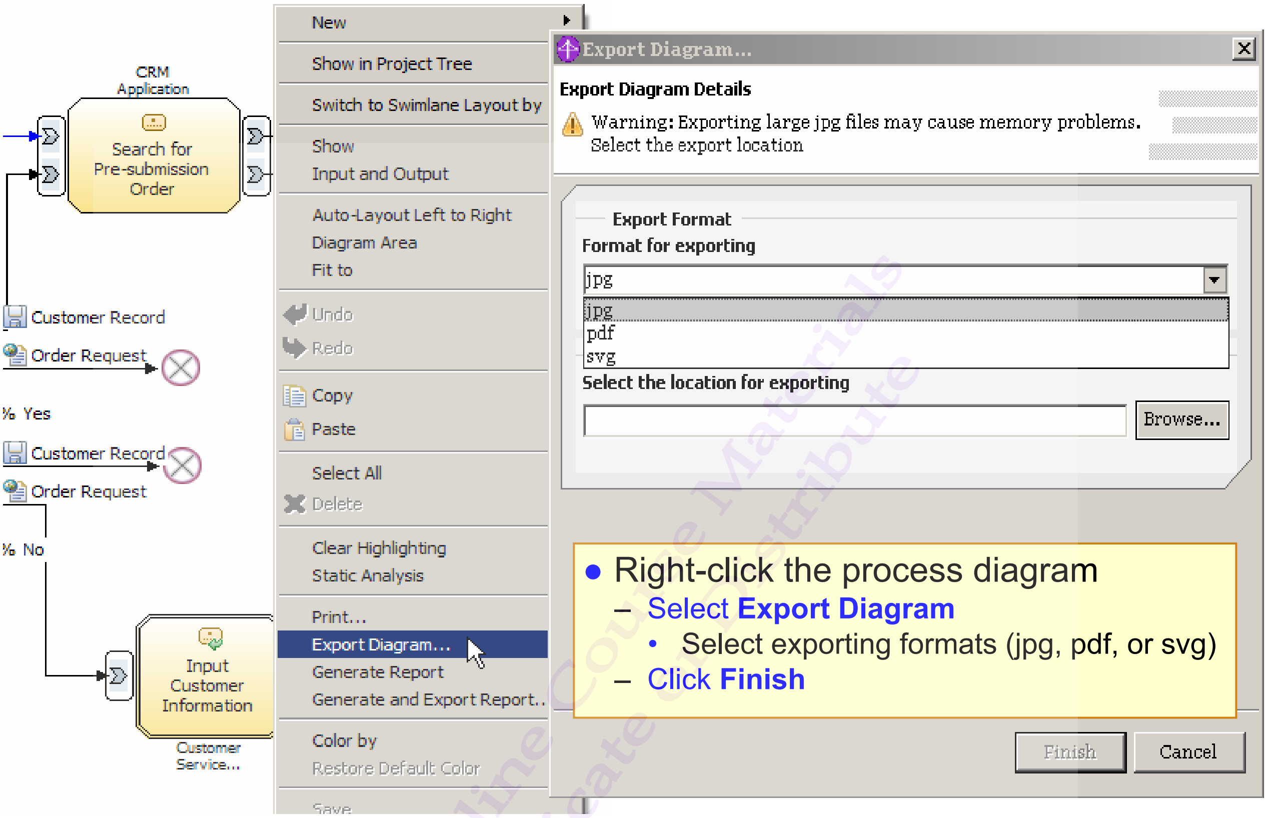
Figure 8-27. Printing a diagram VB1841.0

Notes:

Export a diagram



Export Diagram Details

Warning: Exporting large jpg files may cause memory problems.
Select the export location

Export Format

Format for exporting

jpg

jpg
pdf
svg

Select the location for exporting

- Right-click the process diagram
  - – Select **Export Diagram**
    - Select exporting formats (jpg, pdf, or svg)
  - – Click **Finish**

Figure 8-28. Export a diagram VB1841.0

Notes:

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Queries

- Queries extract and show information on elements in models
  - Queries return information about model elements of one specified type
- Use queries to:
  - Confirm that the content of your models accurately represents your business
  - Gather required information for making business decisions
  - Document and disseminate specific types of information
  - Define the content that is used for creating reports
- A variety of documentation queries are available:
  - Statistics queries
    - Return the number of elements associated with the selected model element
  - Details queries
    - Return element names, such as resources, roles, organization units, locations, and business items, that are associated with the selected element
  - Specification queries
    - Return the values contained in the specification of the selected element

Figure 8-29. Queries VB1841.0

Notes:

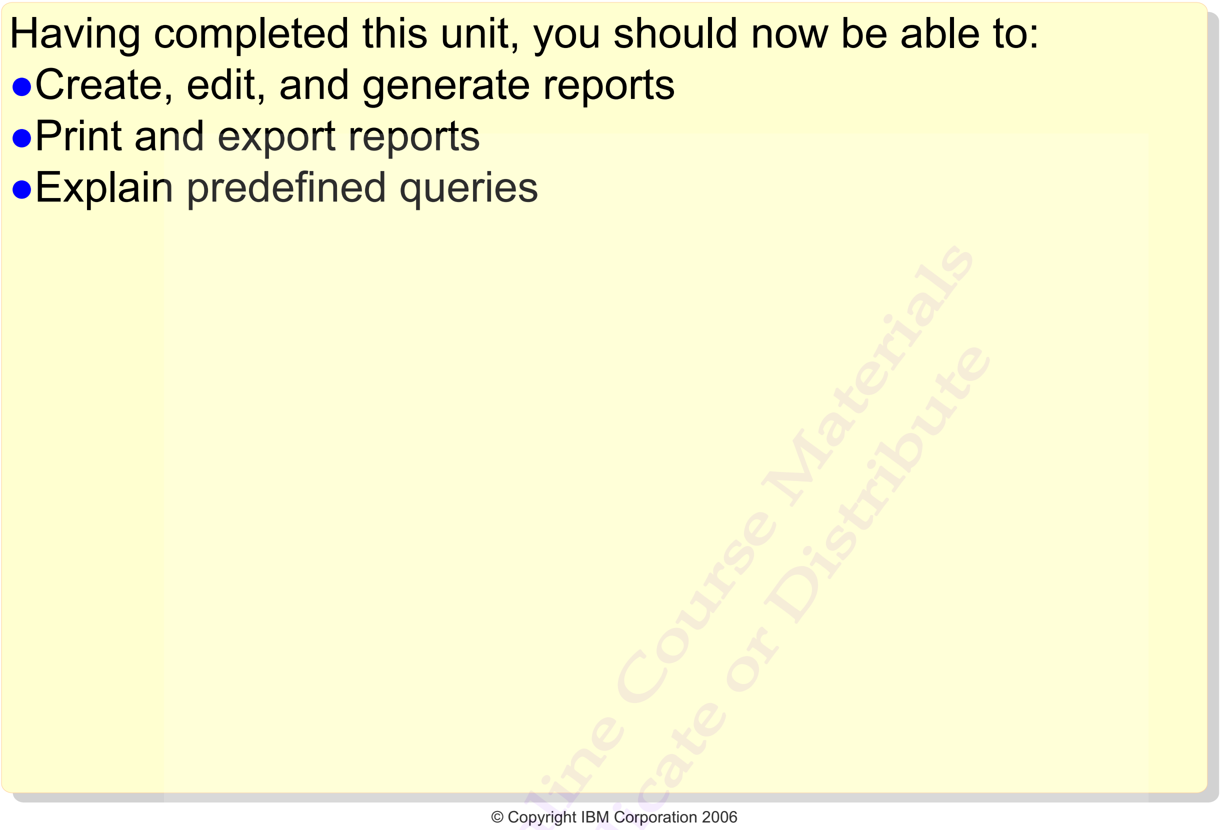
Documentation queries

The following documentation queries are provided:

- Business item instance specification
- Business item specification
- Business item template specification
- Location definition specification
- Location definition template specification
- Location specification
- Notification specification
- Organization definition specification
- Organization definition template specification
- Organization unit specification
- Process details
- Process specification
- Process statistics
- Repository specification
- Resource definition specification
- Resource definition template specification
- Resource specification
- Role specification
- Service details
- Service specification
- Service statistics
- Task details
- Task specification
- Task statistics
- Timetable specification

Figure 8-30. Documentation queries VB1841.0

Notes:



Summary

Having completed this unit, you should now be able to:

- Create, edit, and generate reports
- Print and export reports
- Explain predefined queries

Figure 8-31. Summary VB1841.0

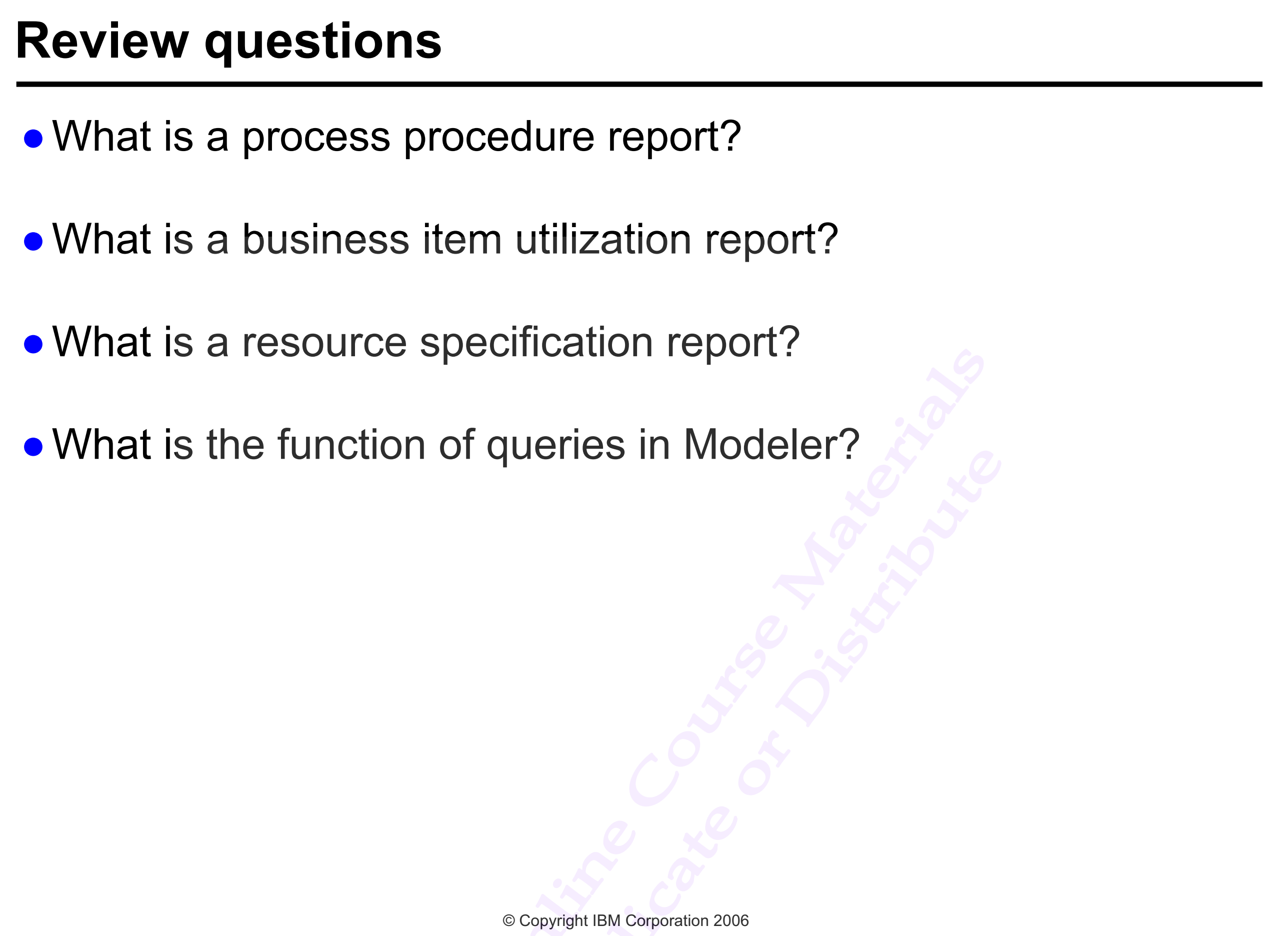
Notes:

Exercise

- Generating and exporting predefined report
- Running a predefined query
- Printing the process diagram

Figure 8-32. Exercise VB1841.0

Notes:



Review questions

- What is a process procedure report?
- What is a business item utilization report?
- What is a resource specification report?
- What is the function of queries in Modeler?

Figure 8-33. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 9. Project management, methodology, and approaches

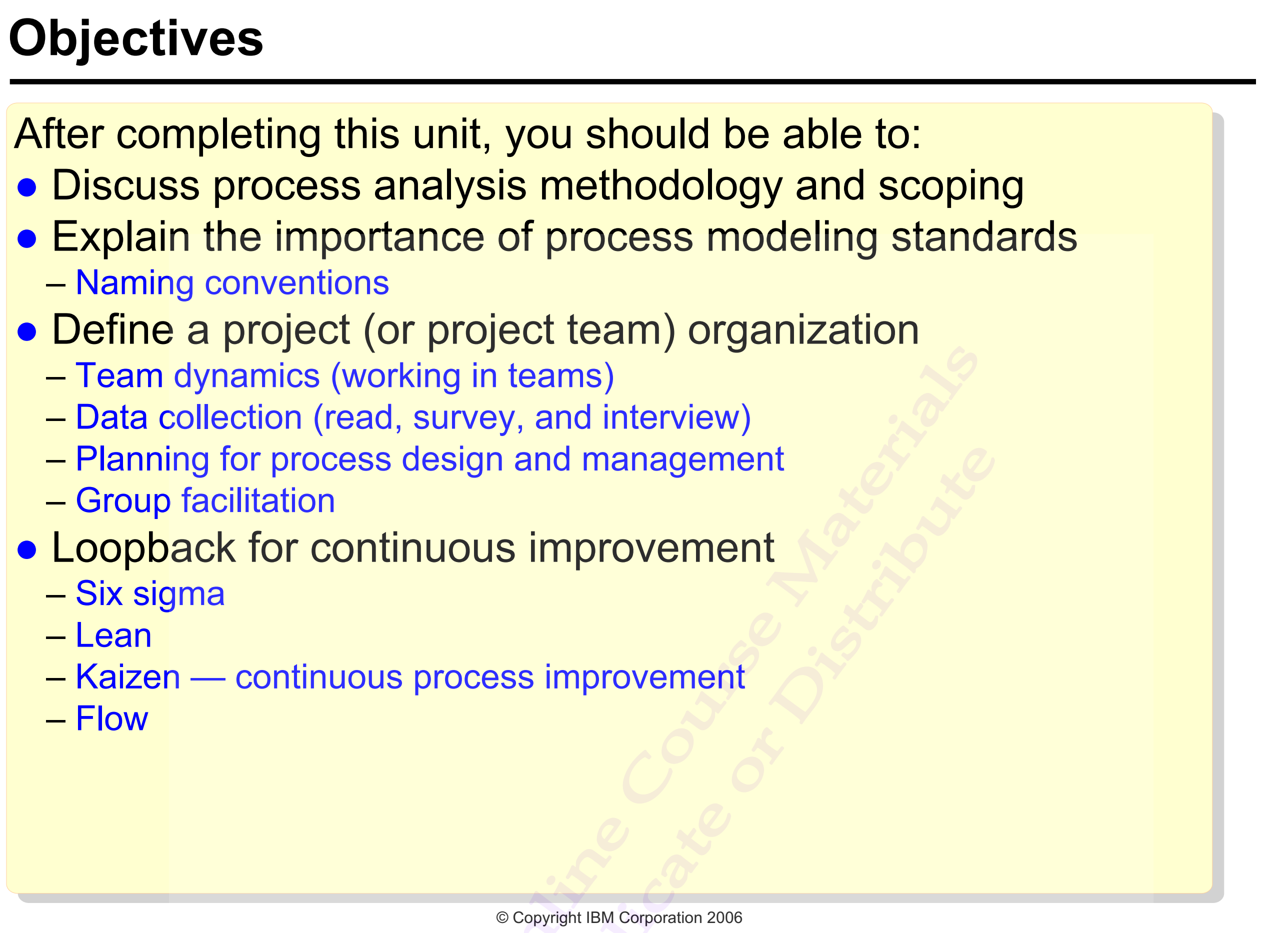
What this unit is about

This unit describes project management, methodology, and approaches.

What you should be able to do

After completing this unit, you should be able to:

- Discuss process analysis methodology and scoping
- Explain the importance of process modeling standards
- Define a project (or project team) organization
- Loopback for continuous improvement



Objectives

After completing this unit, you should be able to:

- Discuss process analysis methodology and scoping
- Explain the importance of process modeling standards
  - Naming conventions
- Define a project (or project team) organization
  - Team dynamics (working in teams)
  - Data collection (read, survey, and interview)
  - Planning for process design and management
  - Group facilitation
- Loopback for continuous improvement
  - Six sigma
  - Lean
  - Kaizen — continuous process improvement
  - Flow

Figure 9-1. Objectives VB1841.0

Notes:

Business process methodology

- A business process methodology is a systematic way of examining the processes of a business to identify and correct inefficiencies in how the business operates. The values of following a methodology are:
  - A common way for individual team members to operate
  - A defined set of processes and the expected result of each process
  - A context for the results so that they can be properly analyzed by the modeling team and by others such as management, consultants, and IT personnel
  - A way to schedule the delivery of these results
- The important point is that WebSphere Business Modeler is neutral toward business process methodologies.
  - It does not support or implement a particular methodology.
  - Instead, it is a tool that business analysts can use within their own methodology to store business process data and analyze it.

Figure 9-2. WebSphere and business process methodology VB1841.0

Notes:

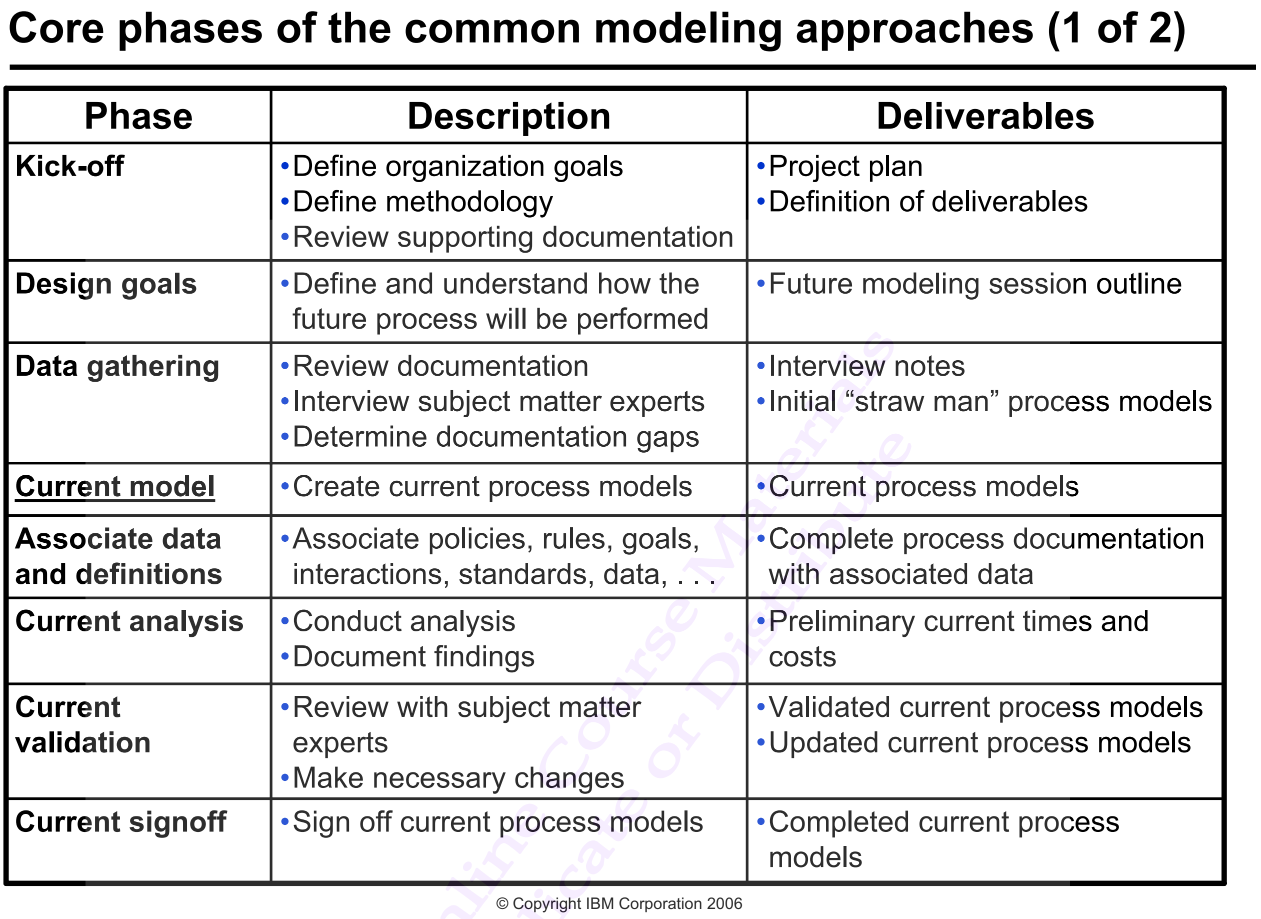
Entry point for the common modeling approaches

- WebSphere Business Modeler provides optimal results when the business process methodology involves three types of models:
  1. The ***current model***: an accurate representation of the business processes as they are currently working. It has two primary purposes:
     - To identify problem areas such as bottlenecks and inefficiencies
     - To serve as a baseline for the second state
  2. A set of what-if ***alternative models*** that solve in various ways the problems identified in the first state.
  3. One model is identified as the best way to implement the business processes — the process ***future model***.

- When the process future model has been selected, it can be used as the baseline ***technical model*** — for example, BPEL or UML — used by other WebSphere tools.
  - IT personnel can use it as the starting point to create deployable applications that support the new business processes.
  - The process future model also serves as a foundation for building the current model in the next iteration of business process modeling.
  - Used by WebSphere Business Monitor to provide performance feedback on the implemented model

Figure 9-3. Entry point for the common modeling approaches VB1841.0

Notes:

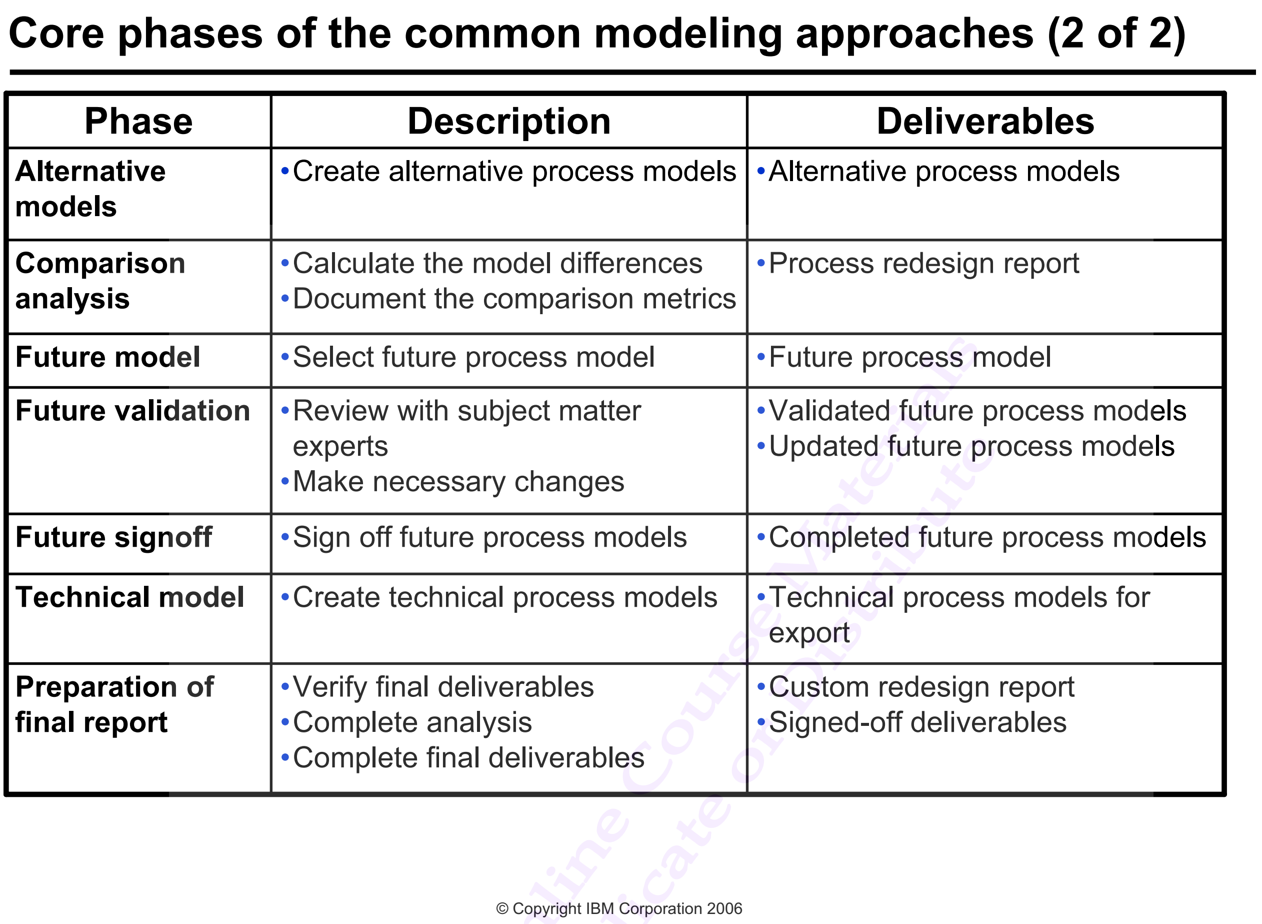


Core phases of the common modeling approaches (1 of 2)

Phase	Description	Deliverables
Kick-off	- Define organization goals - Define methodology - Review supporting documentation	- Project plan - Definition of deliverables
Design goals	- Define and understand how the future process will be performed	- Future modeling session outline
Data gathering	- Review documentation - Interview subject matter experts - Determine documentation gaps	- Interview notes - Initial “straw man” process models
Current model	- Create current process models	- Current process models
Associate data and definitions	- Associate policies, rules, goals, interactions, standards, data, . . .	- Complete process documentation with associated data
Current analysis	- Conduct analysis - Document findings	- Preliminary current times and costs
Current validation	- Review with subject matter experts - Make necessary changes	- Validated current process models - Updated current process models
Current signoff	- Sign off current process models	- Completed current process models

Figure 9-4. Core phases of the common modeling approaches (1 of 2) VB1841.0

Notes:



Core phases of the common modeling approaches (2 of 2)

Phase	Description	Deliverables
Alternative models	•Create alternative process models	•Alternative process models
Comparison analysis	•Calculate the model differences •Document the comparison metrics	•Process redesign report
Future model	•Select future process model	•Future process model
Future validation	•Review with subject matter experts •Make necessary changes	•Validated future process models •Updated future process models
Future signoff	•Sign off future process models	•Completed future process models
Technical model	•Create technical process models	•Technical process models for export
Preparation of final report	•Verify final deliverables •Complete analysis •Complete final deliverables	•Custom redesign report •Signed-off deliverables

Figure 9-5. Core phases of the common modeling approaches (2 of 2) VB1841.0

Notes:

Reasons for modeling processes

- There are many reasons for modeling processes throughout the project.
- The benefits of the model may include any or all of the following:
  - Documenting the current process
  - Creating a common understanding
  - Identifying areas for improvements
  - Defining a common vision of a future process
  - Developing requirements for new organizations and technology
  - Continuous monitoring and improvement
  - Educating process participants
  - Providing the baseline for a new or improved technical solution

Figure 9-6. Reasons for modeling processes VB1841.0

Notes:

Understanding the business problem

- Examine the process in the context of the project objectives
  - Projects to solve business problems are usually defined long before the process to be analyzed is identified.
  - It is important to understand the business problem before committing to the type of modeling to be done.
    - What is the project attempting to accomplish?
    - What is included within the scope of the project?
    - What is the project time frame?
    - What is the project organization?
    - What are the deliverables?
    - What are the expected potential benefits?

Figure 9-7. Understanding the business problem VB1841.0

Notes:

Context and purpose of the process model

- Understanding the context and purpose of the process model helps you define the process model scope
  - Explore the critical task of defining the boundaries of the business process model — the scope.
  - The scope of a project provides guidelines for modeling, analysis, and design.
  - The scope of a process model clearly identifies the area of a business to be included in the project.
    - A subprocess
    - One or more processes
    - One or more departments
    - One or more divisions
    - The whole organization
    - Multiple organizations

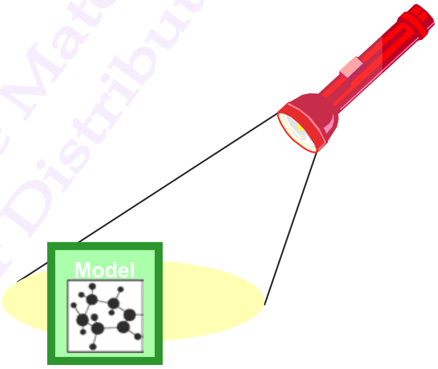
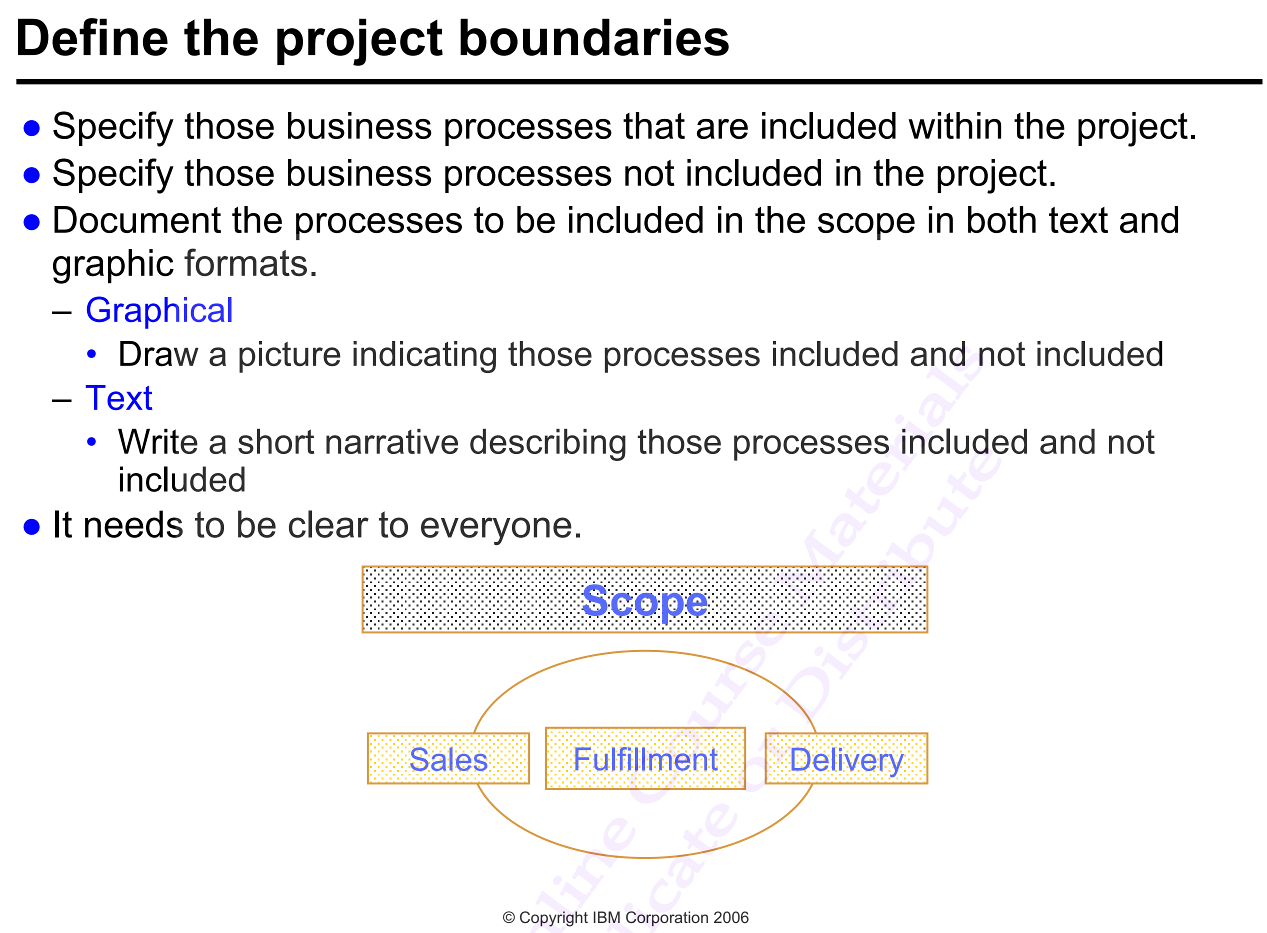


Figure 9-8. Context and purpose of the process model VB1841.0

Notes:



Define the project boundaries

- Specify those business processes that are included within the project.
- Specify those business processes not included in the project.
- Document the processes to be included in the scope in both text and graphic formats.
  - Graphical
    - Draw a picture indicating those processes included and not included
  - Text
    - Write a short narrative describing those processes included and not included
- It needs to be clear to everyone.

Figure 9-9. Define the project boundaries VB1841.0

Notes:

Clearly define and document the scope

- Minimize individual or personal interpretations of the project.
- Gain commitments to a common vision for the project.
- Use the project charter and scope to do continuous evaluation of the project performance.
  - Review project documentation for business process issues.
  - Conduct additional interviews to clarify process-related issues.
  - Determine if the key issues are included within the processes in scope.
  - Change the scope if necessary or change outcome expectations.

Project charter

Business purpose
Improve, redesign, and automate

Process scope
Define what is in and what is out

Goals of the modeling effort
Define the purpose of the model

Project organization
Sponsor, project manager, members, and time commitment

Key contacts
Subject matter experts

Project plan and schedule

Glossary of key terms

Figure 9-10. Clearly define and document the scope VB1841.0

Notes:

Define a process architecture

- A service-oriented architecture lets you build, deploy, and integrate individual business functions and processes independent of the applications and computing platforms on which they run.
- An SOA+ process framework defines the principles and guidelines of how to reduce process model complexity, by organizing them into more manageable and reusable elements — process modules.
- Once a process design has been defined or redesigned, it may be modularized for a simpler implementation and to discover reusable segments.
- Although some process modules will represent the smallest atomic form of only a single service, some process modules can be nested and contain other process modules.
- Services will be associated to certain process objects.
- Services need to be defined in the context of:
  - What, who, how, where, why, and when

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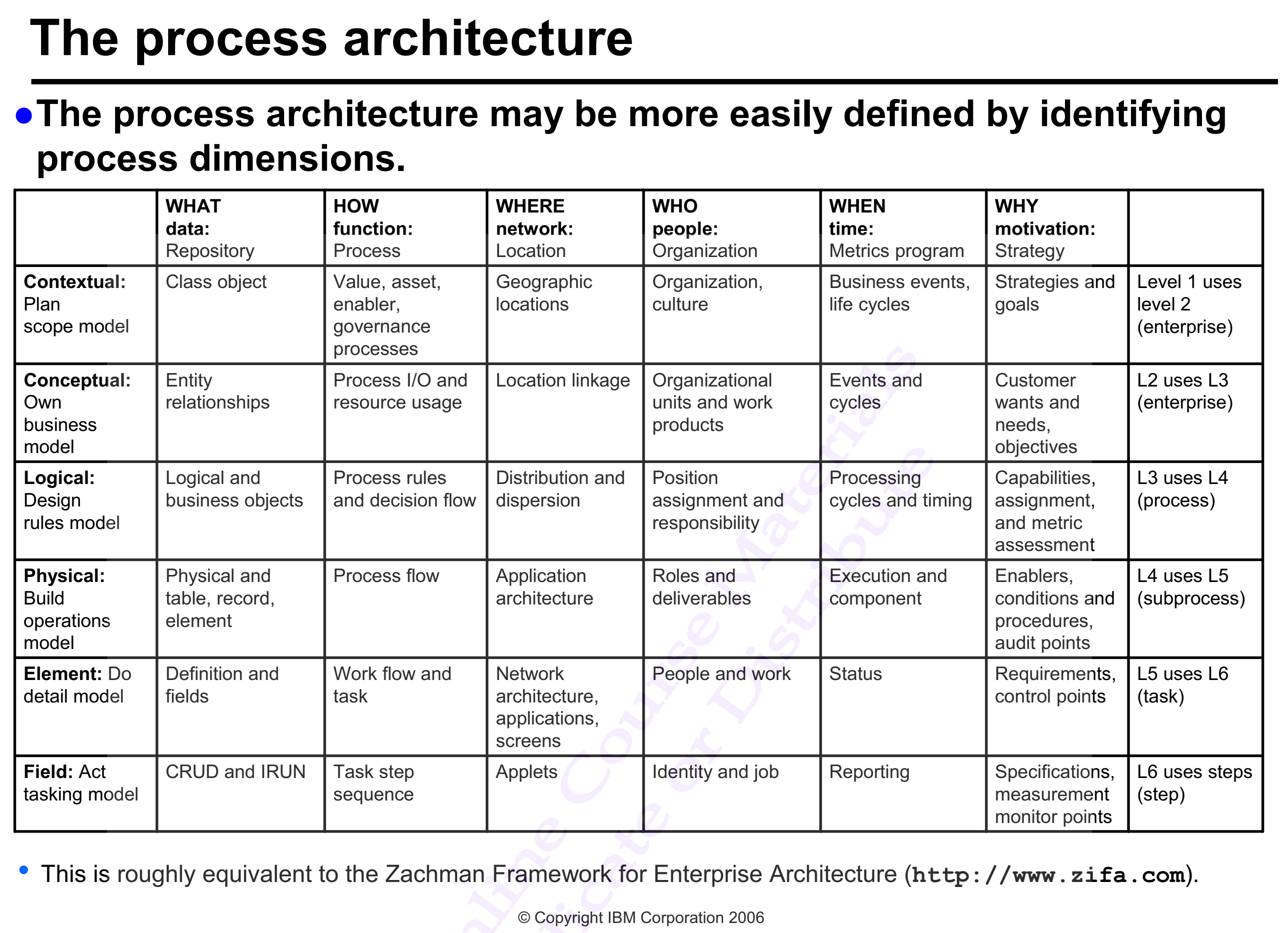
Figure 9-11. Define a process architecture VB1841.0

Notes:

The SOA+'s use of process modules is key in the fusion of the business environment to the IT environment. Process models are the basis to create operational workflows that run on workflow engines, since they are used as inputs into IBM's workflow modeling tool (WebSphere Studio Application Developer Integration Edition, or WSADIE). These resulting workflows will in essence be the operational instantiation of their process model counterparts. Process modules can be instantiated as any of the following:

- Workflow (both manual and automated interactions with services)
- Code or component services that are used by workflow
- Combinations of both



The process architecture

- **The process architecture may be more easily defined by identifying process dimensions.**

	WHAT data: Repository	**HOW function:** Process	**WHERE network:** Location	**WHO people:** Organization	**WHEN time:** Metrics program	**WHY motivation:** Strategy	
Contextual: Plan scope model	Class object	Value, asset, enabler, governance processes	Geographic locations	Organization, culture	Business events, life cycles	Strategies and goals	Level 1 uses level 2 (enterprise)
Conceptual: Own business model	Entity relationships	Process I/O and resource usage	Location linkage	Organizational units and work products	Events and cycles	Customer wants and needs, objectives	L2 uses L3 (enterprise)
Logical: Design rules model	Logical and business objects	Process rules and decision flow	Distribution and dispersion	Position assignment and responsibility	Processing cycles and timing	Capabilities, assignment, and metric assessment	L3 uses L4 (process)
Physical: Build operations model	Physical and table, record, element	Process flow	Application architecture	Roles and deliverables	Execution and component	Enablers, conditions and procedures, audit points	L4 uses L5 (subprocess)
Element: Do detail model	Definition and fields	Work flow and task	Network architecture, applications, screens	People and work	Status	Requirements, control points	L5 uses L6 (task)
Field: Act tasking model	CRUD and IRUN	Task step sequence	Applets	Identity and job	Reporting	Specifications, measurement monitor points	L6 uses steps (step)

- This is roughly equivalent to the Zachman Framework for Enterprise Architecture (`http://www.zifa.com`).

Figure 9-12. The process architecture VB1841.0

Notes:

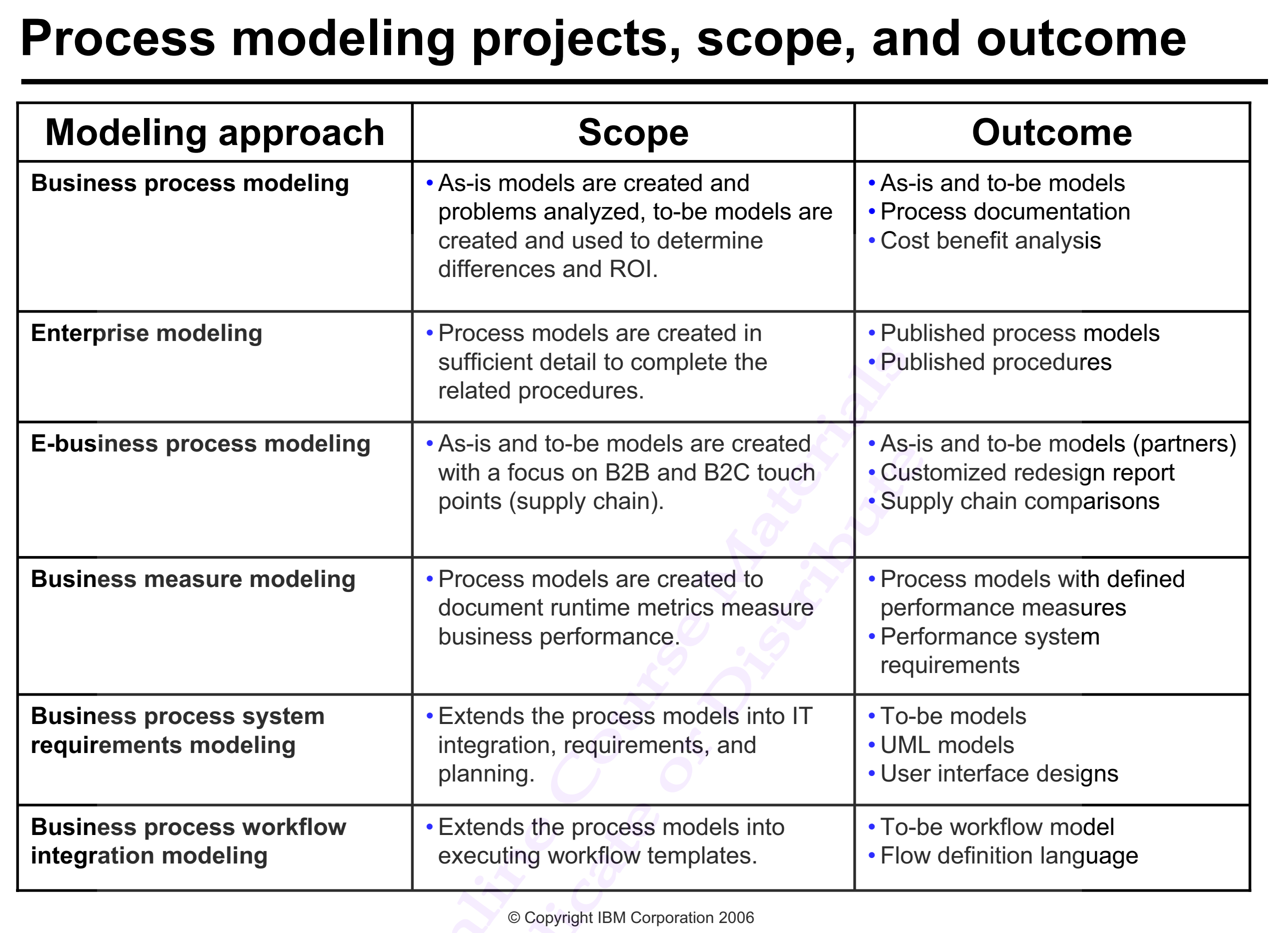
This is roughly equivalent to the Zachman Framework for Enterprise Architecture (`http://www.zifa.com/`).

Type of process modeling project

- Understanding the scope and process architecture is your guide to the type of process modeling project
- Each project type requires a slight variation in its approach
  - Enterprise modeling
    - Detailed documentation
  - E-business process modeling
    - Define partner (B2B and B2C) models
  - Business process modeling
    - Changing or improving processes
  - Business measure modeling
    - Establish metrics and monitor performance
  - Business process system requirements modeling
    - Develop IT requirements
  - Business process workflow integration modeling
    - Develop workflow applications

Figure 9-13. Type of process modeling project VB1841.0

Notes:

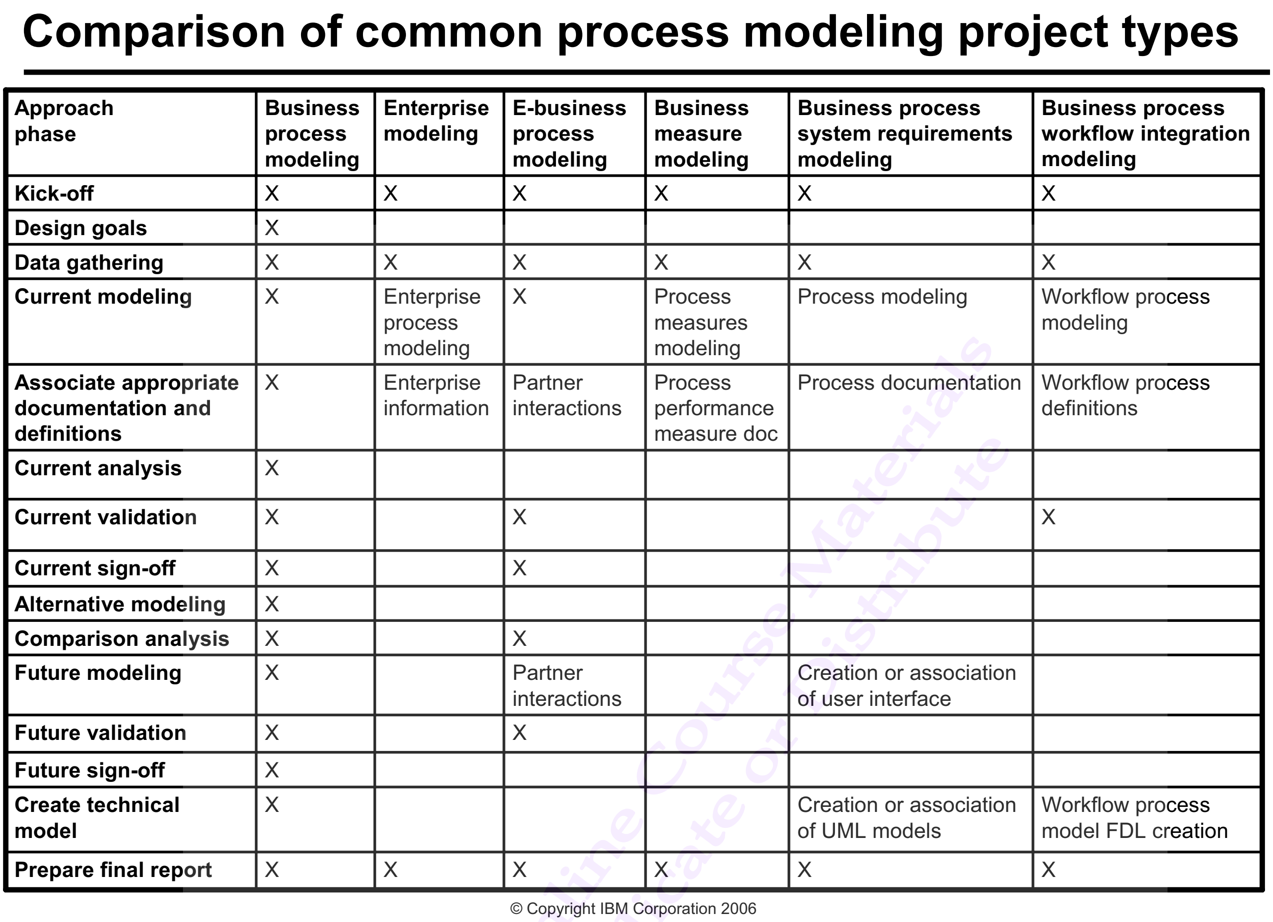


Process modeling projects, scope, and outcome

Modeling approach	Scope	Outcome
Business process modeling	• As-is models are created and problems analyzed, to-be models are created and used to determine differences and ROI.	• As-is and to-be models • Process documentation • Cost benefit analysis
Enterprise modeling	• Process models are created in sufficient detail to complete the related procedures.	• Published process models • Published procedures
E-business process modeling	• As-is and to-be models are created with a focus on B2B and B2C touch points (supply chain).	• As-is and to-be models (partners) • Customized redesign report • Supply chain comparisons
Business measure modeling	• Process models are created to document runtime metrics measure business performance.	• Process models with defined performance measures • Performance system requirements
Business process system requirements modeling	• Extends the process models into IT integration, requirements, and planning.	• To-be models • UML models • User interface designs
Business process workflow integration modeling	• Extends the process models into executing workflow templates.	• To-be workflow model • Flow definition language

Figure 9-14. Process modeling projects, scope, and outcome VB1841.0

Notes:



Comparison of common process modeling project types

Approach phase	Business process modeling	Enterprise modeling	E-business process modeling	Business measure modeling	Business process system requirements modeling	Business process workflow integration modeling
Kick-off	X	X	X	X	X	X
Design goals	X					
Data gathering	X	X	X	X	X	X
Current modeling	X	Enterprise process modeling	X	Process measures modeling	Process modeling	Workflow process modeling
Associate appropriate documentation and definitions	X	Enterprise information	Partner interactions	Process performance measure doc	Process documentation	Workflow process definitions
Current analysis	X					
Current validation	X		X			X
Current sign-off	X		X			
Alternative modeling	X					
Comparison analysis	X		X			
Future modeling	X		Partner interactions		Creation or association of user interface	
Future validation	X		X			
Future sign-off	X					
Create technical model	X				Creation or association of UML models	Workflow process model FDL creation
Prepare final report	X	X	X	X	X	X

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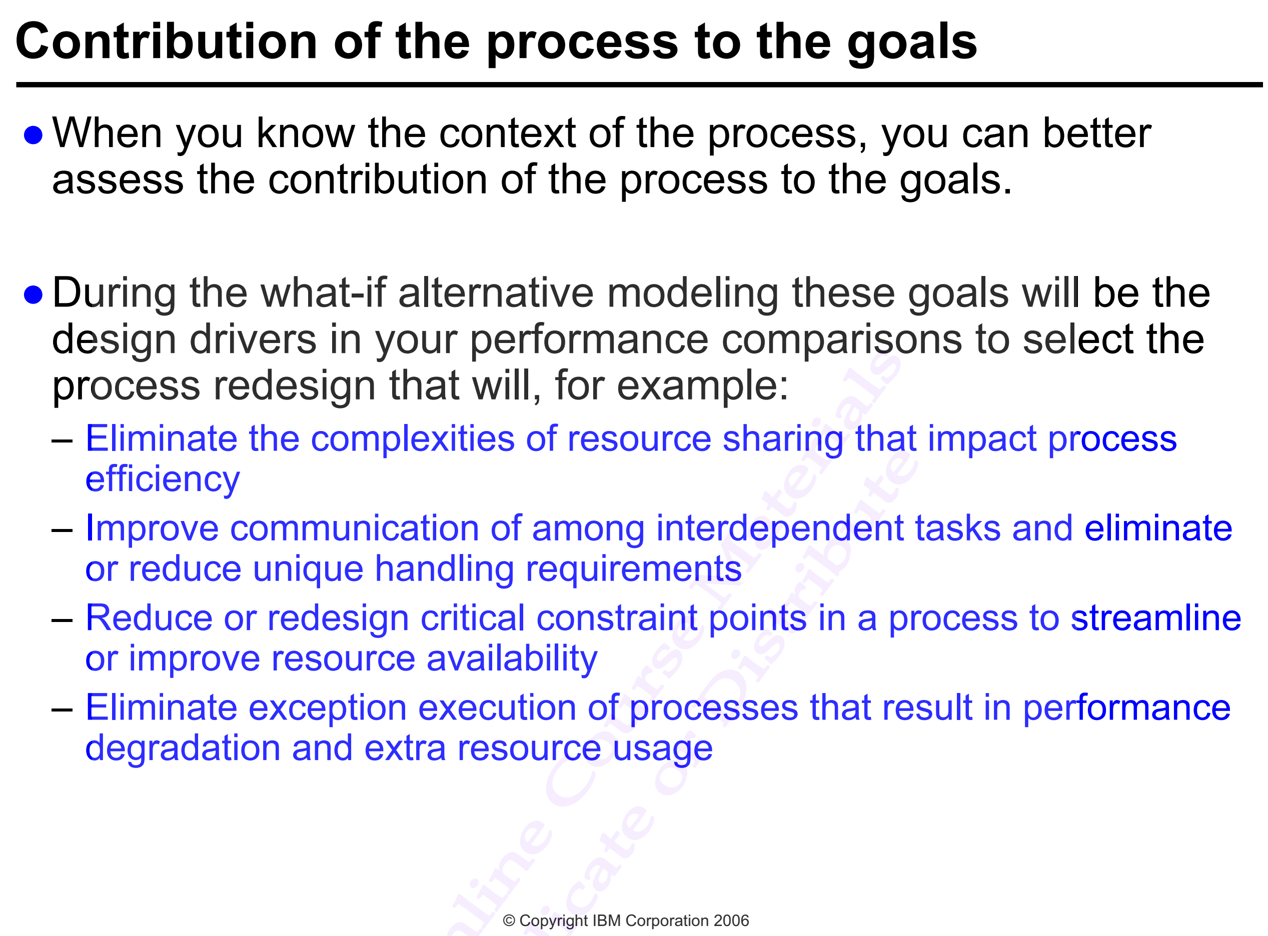
Figure 9-15. Comparison of common process modeling project types VB1841.0

Notes:

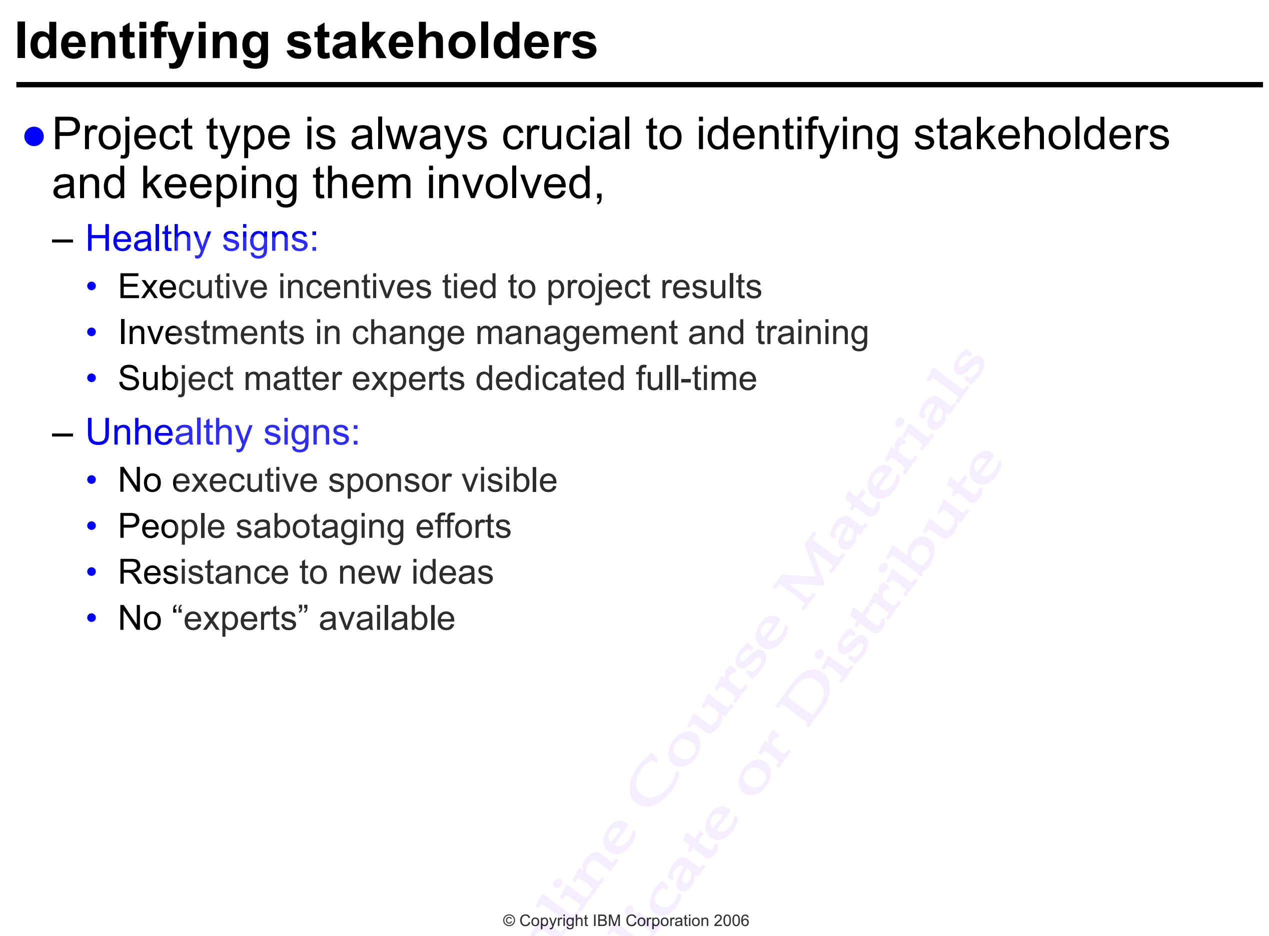


Contribution of the process to the goals

- When you know the context of the process, you can better assess the contribution of the process to the goals.
- During the what-if alternative modeling these goals will be the design drivers in your performance comparisons to select the process redesign that will, for example:
  - Eliminate the complexities of resource sharing that impact process efficiency
  - Improve communication of among interdependent tasks and eliminate or reduce unique handling requirements
  - Reduce or redesign critical constraint points in a process to streamline or improve resource availability
  - Eliminate exception execution of processes that result in performance degradation and extra resource usage

Figure 9-16. Contribution of the process to the goals VB1841.0

Notes:

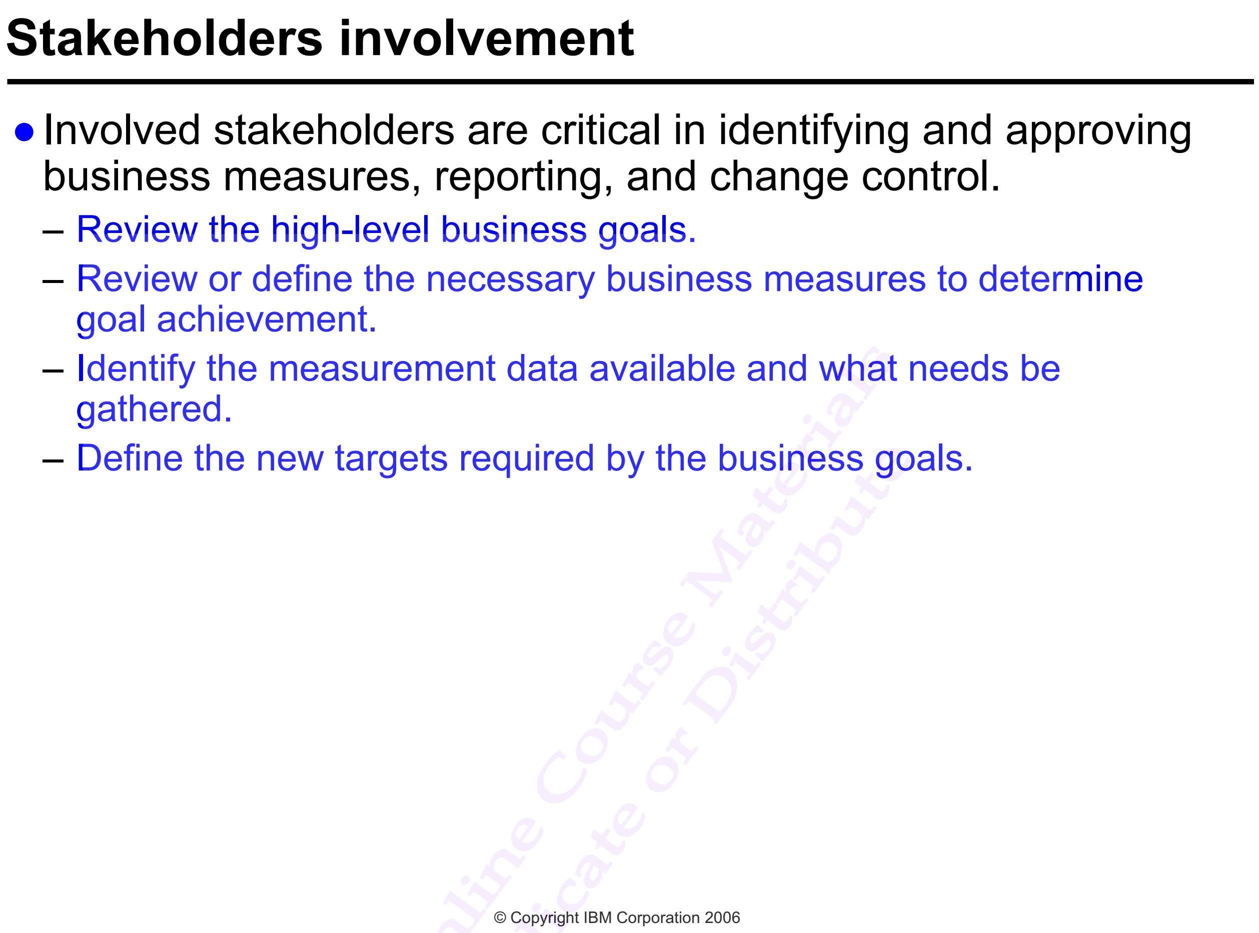


Identifying stakeholders

- Project type is always crucial to identifying stakeholders and keeping them involved,
  - Healthy signs:
    - Executive incentives tied to project results
    - Investments in change management and training
    - Subject matter experts dedicated full-time
  - Unhealthy signs:
    - No executive sponsor visible
    - People sabotaging efforts
    - Resistance to new ideas
    - No “experts” available

Figure 9-17. Identifying stakeholders VB1841.0

Notes:



Stakeholders involvement

- Involved stakeholders are critical in identifying and approving business measures, reporting, and change control.
  - Review the high-level business goals.
  - Review or define the necessary business measures to determine goal achievement.
  - Identify the measurement data available and what needs be gathered.
  - Define the new targets required by the business goals.

Figure 9-18. Stakeholders involvement VB1841.0

Notes:

Defining standards and agreeing to best practices

- Your stakeholders will also help you define the standards and gain the agreement required to maintain best practices.
  - WebSphere Business Modeler is methodology independent, but successful modeling efforts require a level of standardization and a defined approach.
  - Process modeling standards:
    - It is necessary to define the use, creation, and implementation of the symbols, definitions, and data descriptions.

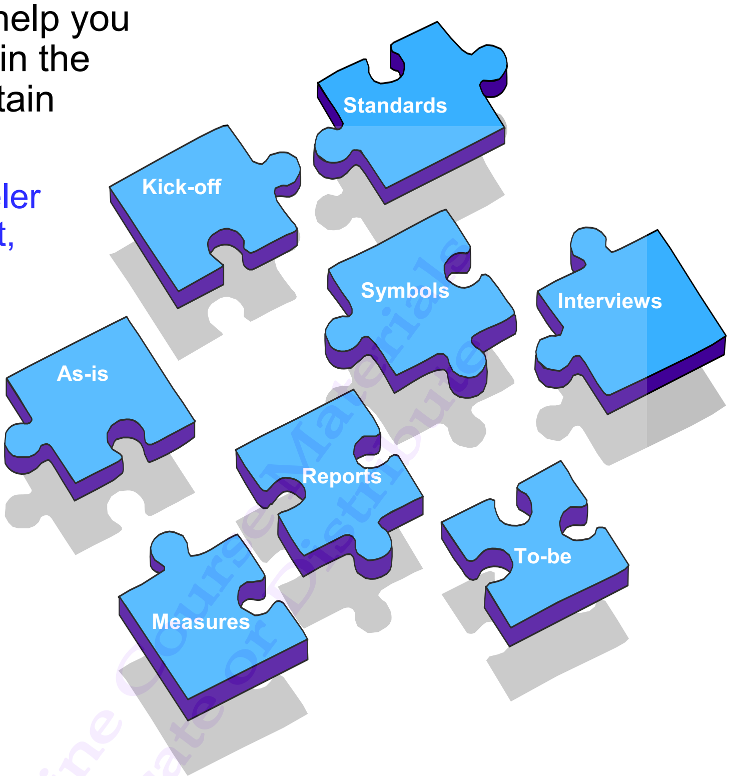
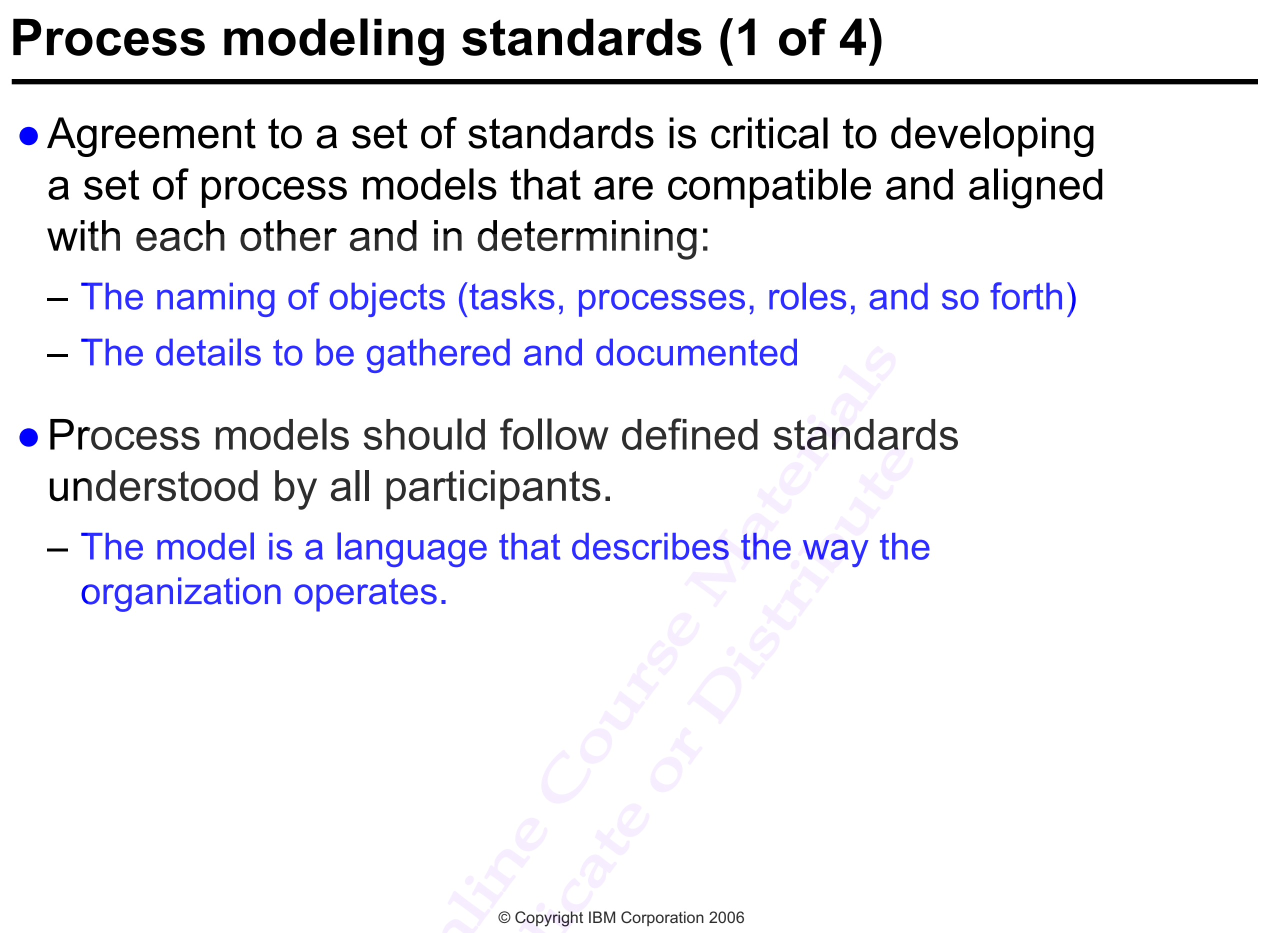


Figure 9-19. Defining standards and agreeing to best practices VB1841.0

Notes:

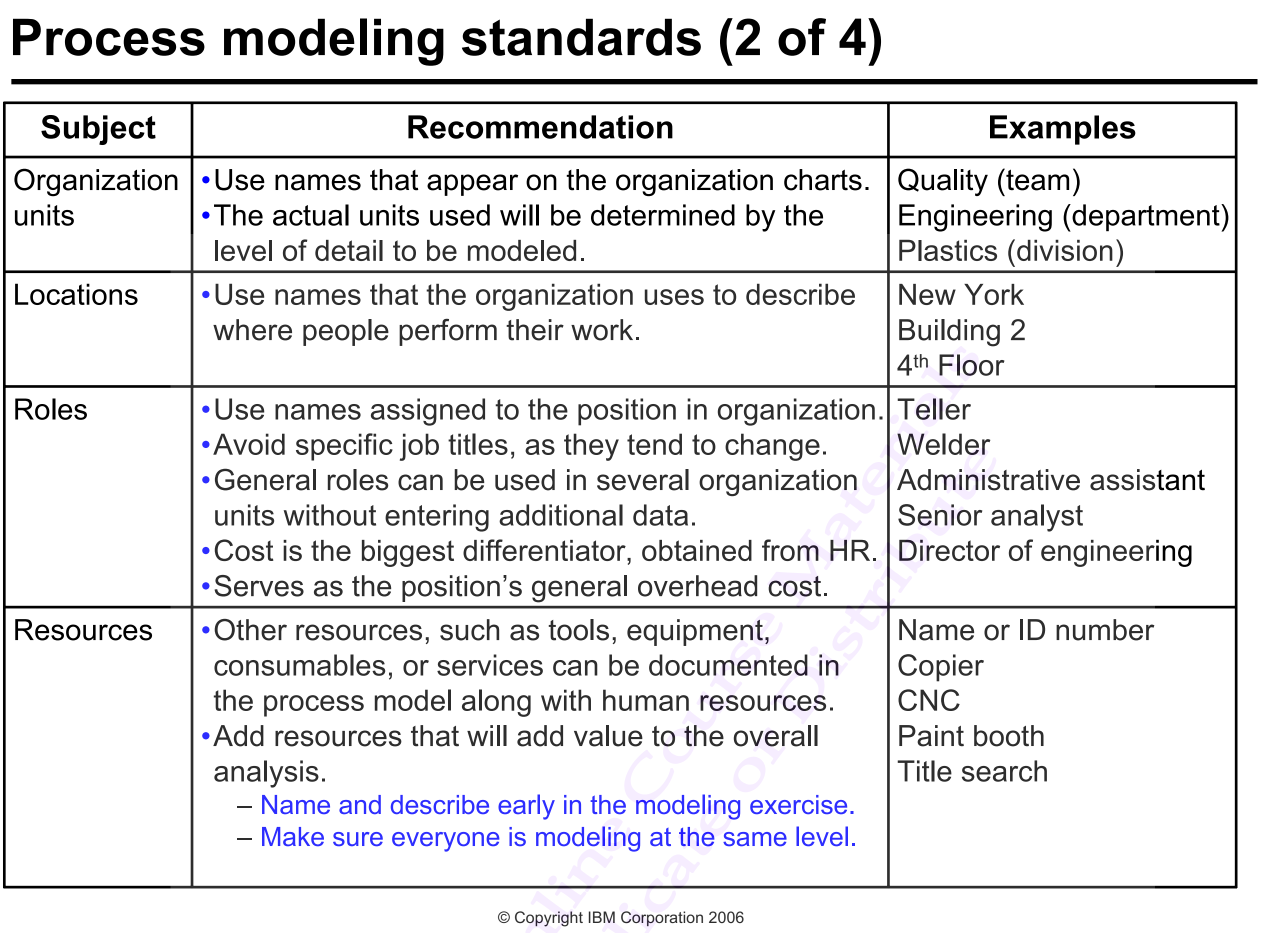


Process modeling standards (1 of 4)

- Agreement to a set of standards is critical to developing a set of process models that are compatible and aligned with each other and in determining:
  - The naming of objects (tasks, processes, roles, and so forth)
  - The details to be gathered and documented
- Process models should follow defined standards understood by all participants.
  - The model is a language that describes the way the organization operates.

Figure 9-20. Process modeling standards (1 of 4) VB1841.0

Notes:

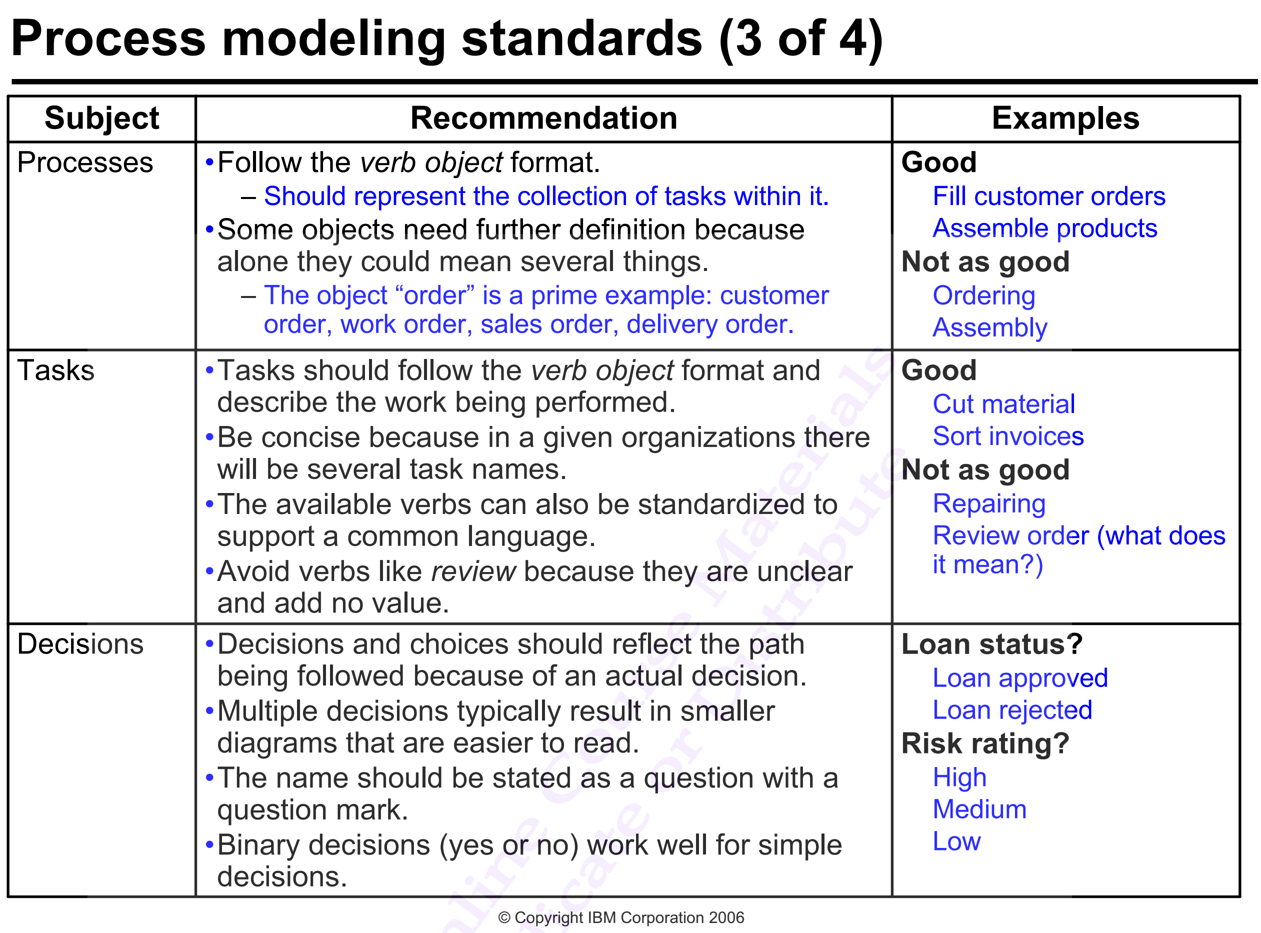


Process modeling standards (2 of 4)

Subject	Recommendation	Examples
Organization units	• Use names that appear on the organization charts. • The actual units used will be determined by the level of detail to be modeled.	Quality (team) Engineering (department) Plastics (division)
Locations	• Use names that the organization uses to describe where people perform their work.	New York Building 2 4th Floor
Roles	• Use names assigned to the position in organization. • Avoid specific job titles, as they tend to change. • General roles can be used in several organization units without entering additional data. • Cost is the biggest differentiator, obtained from HR. • Serves as the position's general overhead cost.	Teller Welder Administrative assistant Senior analyst Director of engineering
Resources	• Other resources, such as tools, equipment, consumables, or services can be documented in the process model along with human resources. • Add resources that will add value to the overall analysis. – Name and describe early in the modeling exercise. – Make sure everyone is modeling at the same level.	Name or ID number Copier CNC Paint booth Title search

Figure 9-21. Process modeling standards (2 of 4) VB1841.0

Notes:

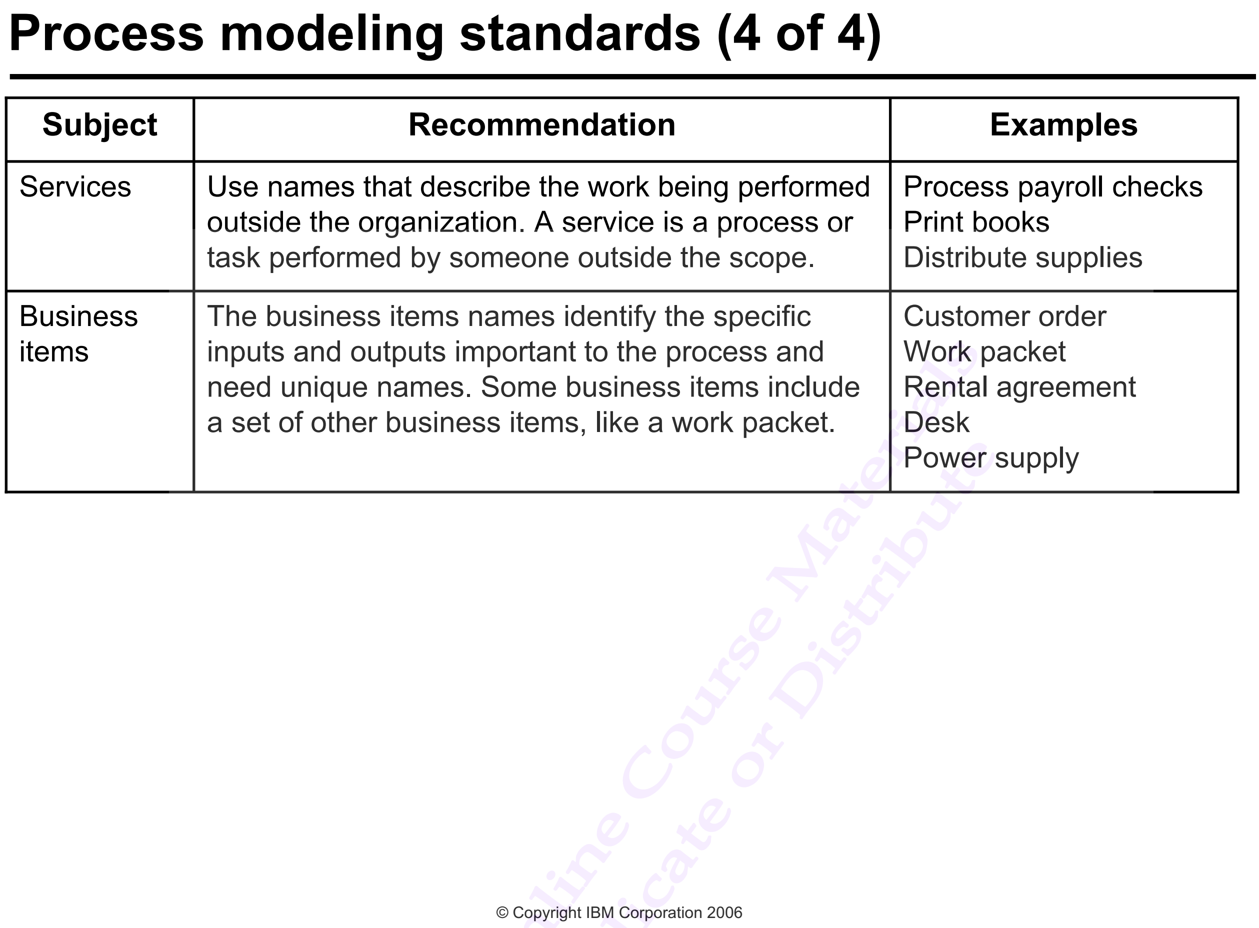


Process modeling standards (3 of 4)

Subject	Recommendation	Examples
Processes	• Follow the *verb object* format. – Should represent the collection of tasks within it. • Some objects need further definition because alone they could mean several things. – The object "order" is a prime example: customer order, work order, sales order, delivery order.	**Good** Fill customer orders Assemble products **Not as good** Ordering Assembly
Tasks	• Tasks should follow the *verb object* format and describe the work being performed. • Be concise because in a given organizations there will be several task names. • The available verbs can also be standardized to support a common language. • Avoid verbs like *review* because they are unclear and add no value.	**Good** Cut material Sort invoices **Not as good** Repairing Review order (what does it mean?)
Decisions	• Decisions and choices should reflect the path being followed because of an actual decision. • Multiple decisions typically result in smaller diagrams that are easier to read. • The name should be stated as a question with a question mark. • Binary decisions (yes or no) work well for simple decisions.	**Loan status?** Loan approved Loan rejected **Risk rating?** High Medium Low

Figure 9-22. Process modeling standards (3 of 4) VB1841.0

Notes:



Process modeling standards (4 of 4)

Subject	Recommendation	Examples
Services	Use names that describe the work being performed outside the organization. A service is a process or task performed by someone outside the scope.	Process payroll checks Print books Distribute supplies
Business items	The business items names identify the specific inputs and outputs important to the process and need unique names. Some business items include a set of other business items, like a work packet.	Customer order Work packet Rental agreement Desk Power supply

Figure 9-23. Process modeling standards (4 of 4) VB1841.0

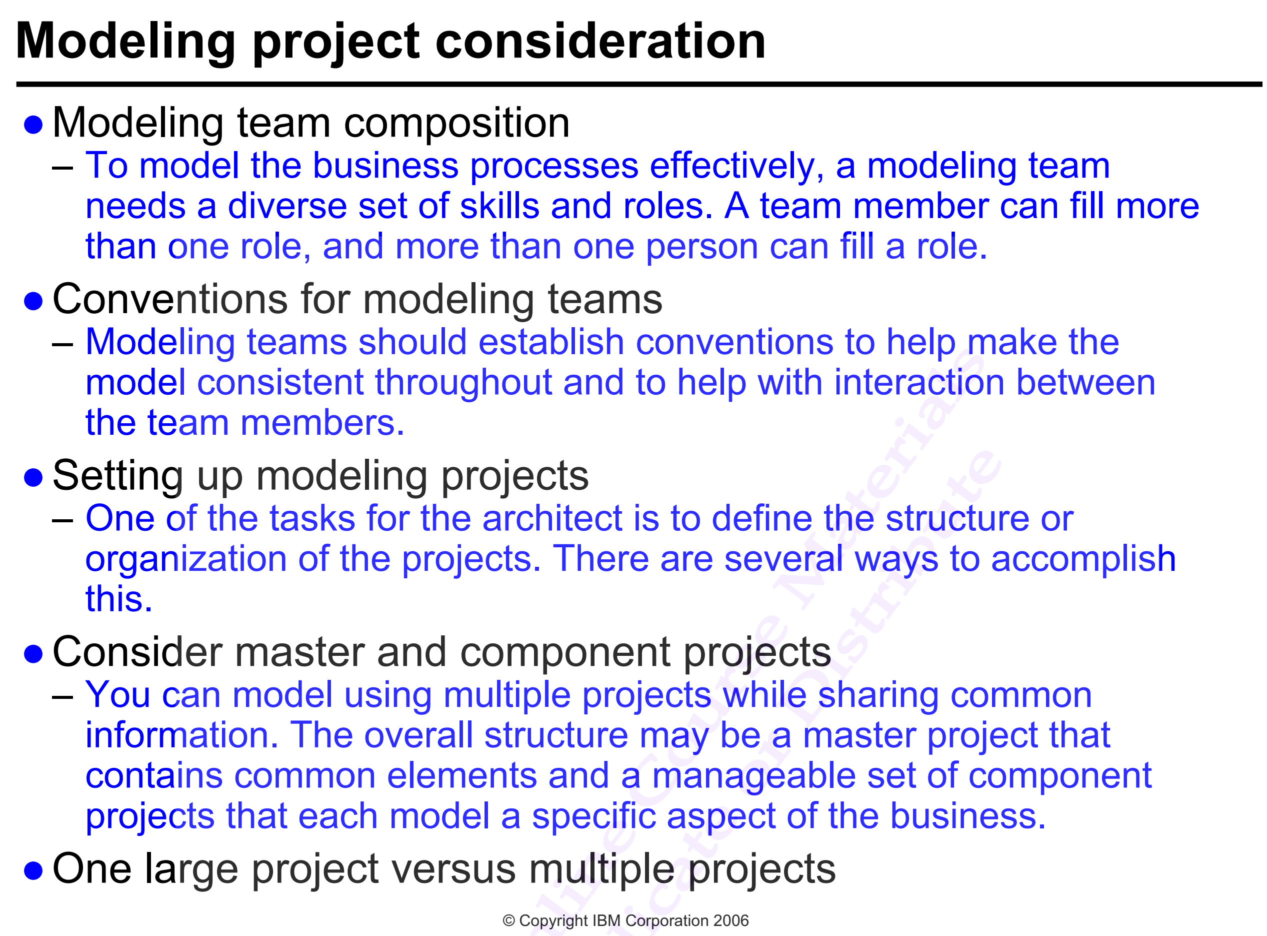
Notes:

Implementing standards

- Agree on the modeling standards.
- Create a “shell” organization file with the standards included in a central repository on a server.
  - It can be copied and used as a starting point for projects, or checked out by those updating the standards.
- Changes or inconsistencies to the standards should go through a governing body as they are identified.
  - Upon agreement, they are added to the “standard organization file” or modified so they meet the existing standard.

Figure 9-24. Implementing standards VB1841.0

Notes:



Modeling project consideration

- Modeling team composition
  - To model the business processes effectively, a modeling team needs a diverse set of skills and roles. A team member can fill more than one role, and more than one person can fill a role.
- Conventions for modeling teams
  - Modeling teams should establish conventions to help make the model consistent throughout and to help with interaction between the team members.
- Setting up modeling projects
  - One of the tasks for the architect is to define the structure or organization of the projects. There are several ways to accomplish this.
- Consider master and component projects
  - You can model using multiple projects while sharing common information. The overall structure may be a master project that contains common elements and a manageable set of component projects that each model a specific aspect of the business.
- One large project versus multiple projects

Figure 9-25. Modeling project consideration VB1841.0

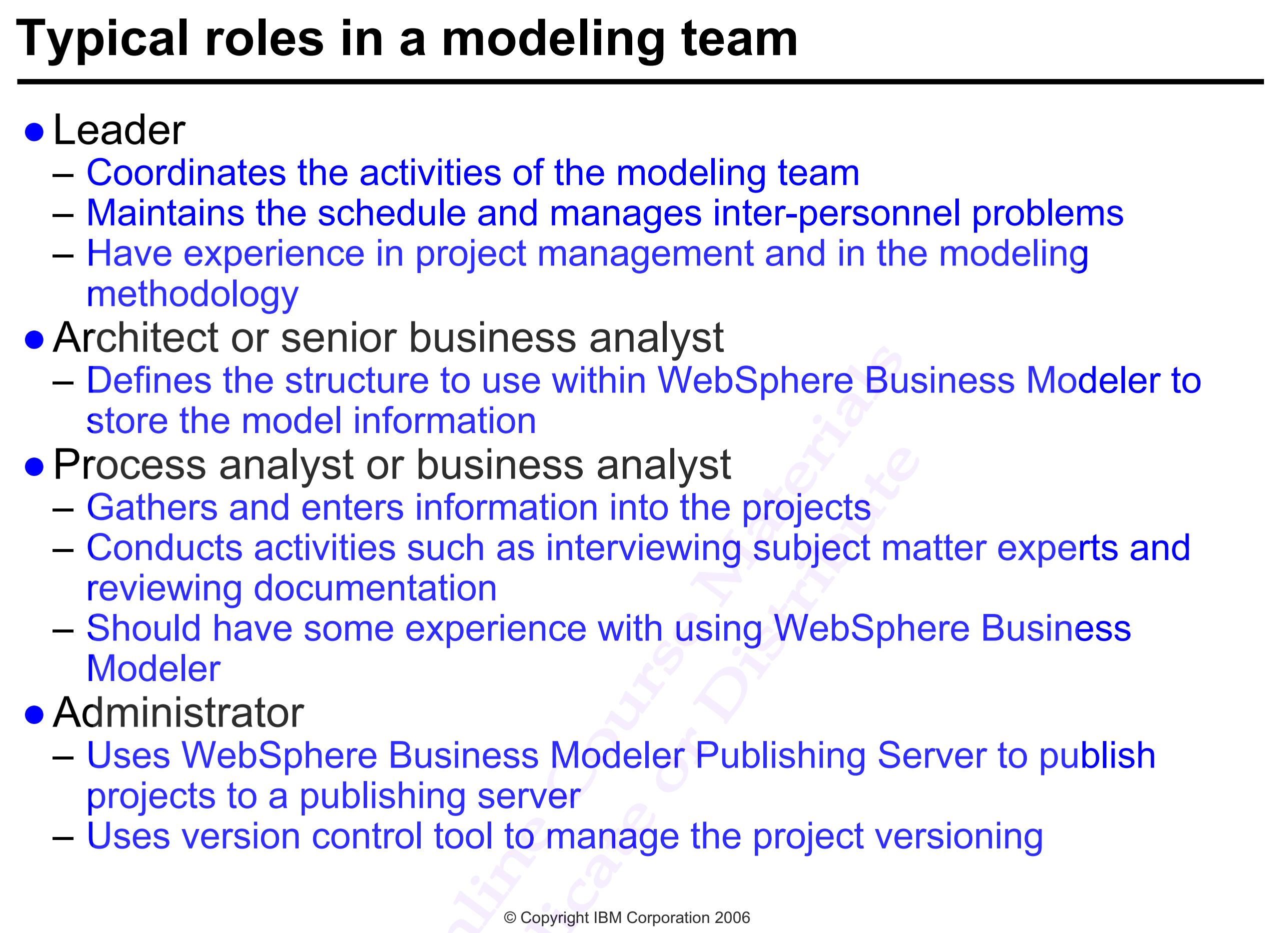
Notes:

One large project:

The architect creates its structure. If the modeling team is using project versioning to store the project, the architect should include at least one file in each folder. This file can be a dummy file that the team deletes after it places a real file in the folder. If the folder does not include at least one file, the folder cannot be retrieved from the repository.

Multiple projects:

The architect can create a project template to provide a common structure for the projects. If the team is using a master project to contain common elements and a set of component projects to contain the various models, the architect can create the template for the project files.



Typical roles in a modeling team

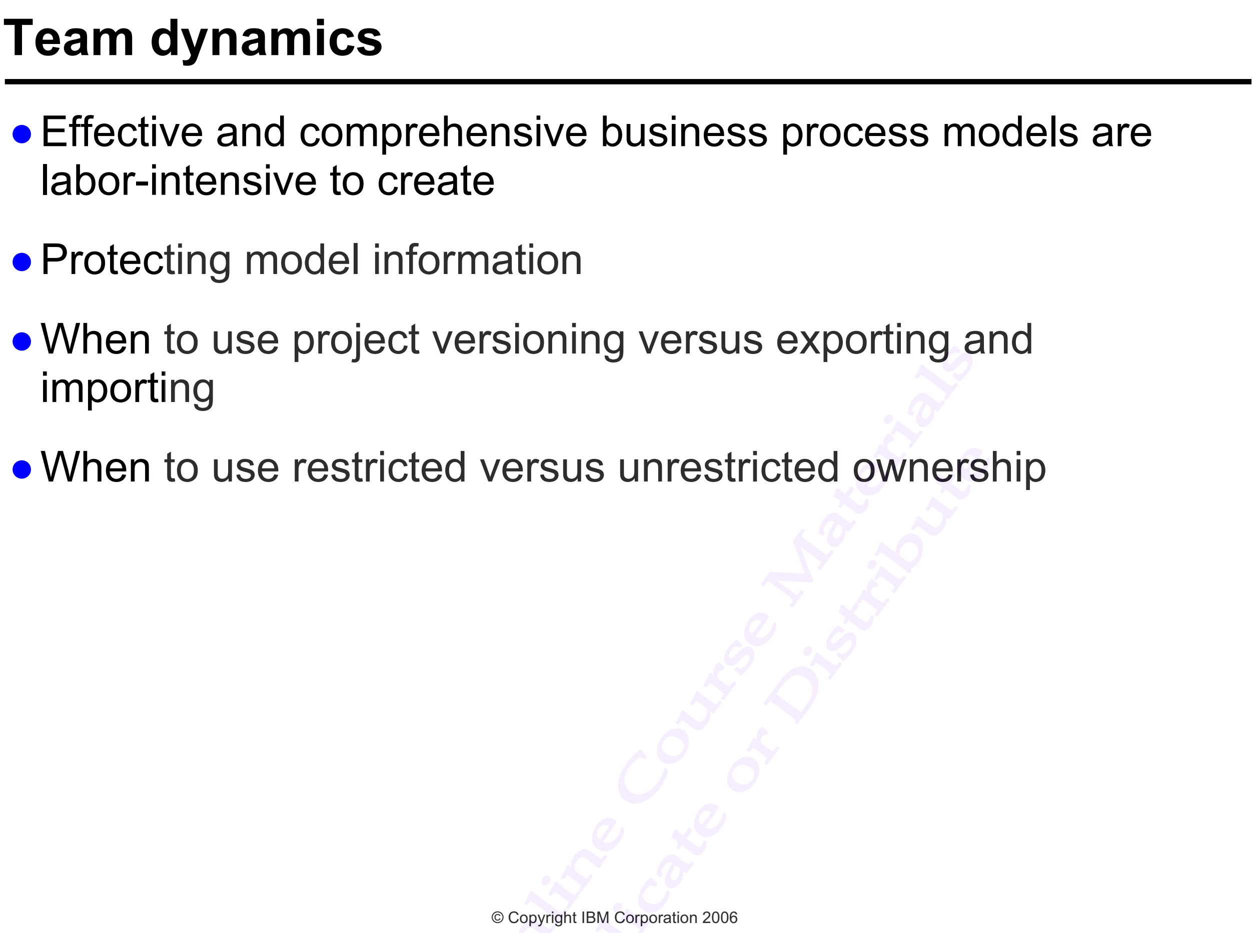
- Leader
  - Coordinates the activities of the modeling team
  - Maintains the schedule and manages inter-personnel problems
  - Have experience in project management and in the modeling methodology
- Architect or senior business analyst
  - Defines the structure to use within WebSphere Business Modeler to store the model information
- Process analyst or business analyst
  - Gathers and enters information into the projects
  - Conducts activities such as interviewing subject matter experts and reviewing documentation
  - Should have some experience with using WebSphere Business Modeler
- Administrator
  - Uses WebSphere Business Modeler Publishing Server to publish projects to a publishing server
  - Uses version control tool to manage the project versioning

Figure 9-26. Typical roles in a modeling team VB1841.0

Notes:

To model the business processes effectively, a modeling team needs a diverse set of skills and roles.

A team member can fill more than one role, and more than one person can fill a role.



Team dynamics

- Effective and comprehensive business process models are labor-intensive to create
- Protecting model information
- When to use project versioning versus exporting and importing
- When to use restricted versus unrestricted ownership

Figure 9-27. Team dynamics VB1841.0

Notes:

Effective and comprehensive business process models are labor intensive to create.

> For example, a simple model with as few as 20 objects in WebSphere Business Modeler might have as many as 200 individual data fields. Larger models might be impossible for a single person to create in a timely manner. The way to solve this issue is to use a team to create the models.

Protecting model information:

> There are a number of decisions that team members must make. These decisions revolve around how the team protects information while simultaneously making it available for all team members to see and use.

When to use project versioning versus exporting and importing:

> WebSphere Business Modeler provides two mechanisms for sharing information between team members: the project versioning component and import and export.

When to use one large project versus many smaller ones:

Before you start modeling the processes, it is highly recommended that you plan the structure of your projects. One of the most important decisions you will make is whether to use one large project or a number of smaller projects to contain the modeling data.

When to use restricted versus unrestricted ownership:

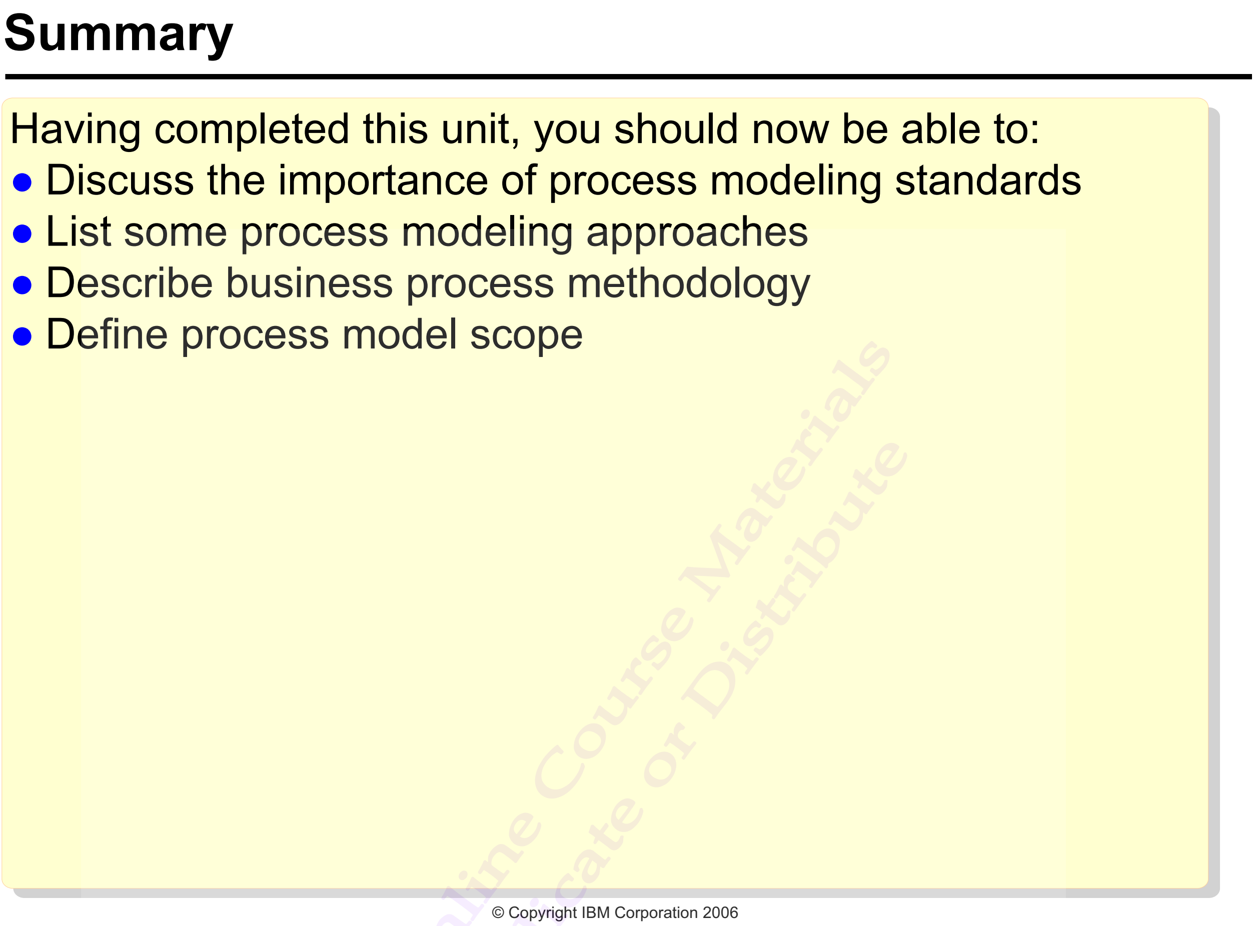
Restricted ownership occurs when users own a project or specific catalogs in a project and only the owner is allowed to modify an element in the project or catalog. Unrestricted ownership occurs when users own a project or specific catalogs, but any user can modify an element in the project or catalog if the owner agrees.

How will the data be collected?

- Determine data needed to assess and design the processes
- Identify the data already available
- Identify the additional data required
- Develop a plan to collect the data
  - Data descriptions
  - Data sources
  - Collection responsibilities
  - Collection deadlines

Figure 9-28. How will the data be collected? VB1841.0

Notes:



Summary

Having completed this unit, you should now be able to:

- Discuss the importance of process modeling standards
- List some process modeling approaches
- Describe business process methodology
- Define process model scope

Figure 9-29. Summary VB1841.0

Notes:

Exercise

- This exercise covers a case study, and an interactive group discussion of the modeling techniques and an alternate solution will follow.
- You are presented with a case study as a business analyst assigned to a business process management project.
  - Read the case and the information about the company and its expenses reporting process.
  - Based on the information provided, use Modeler to created a project, business items, and the process diagram.
- Translate “What they said” into a meaningful model.

Figure 9-30. Exercise VB1841.0

Notes:

Unit 10.Collaboration support for version control

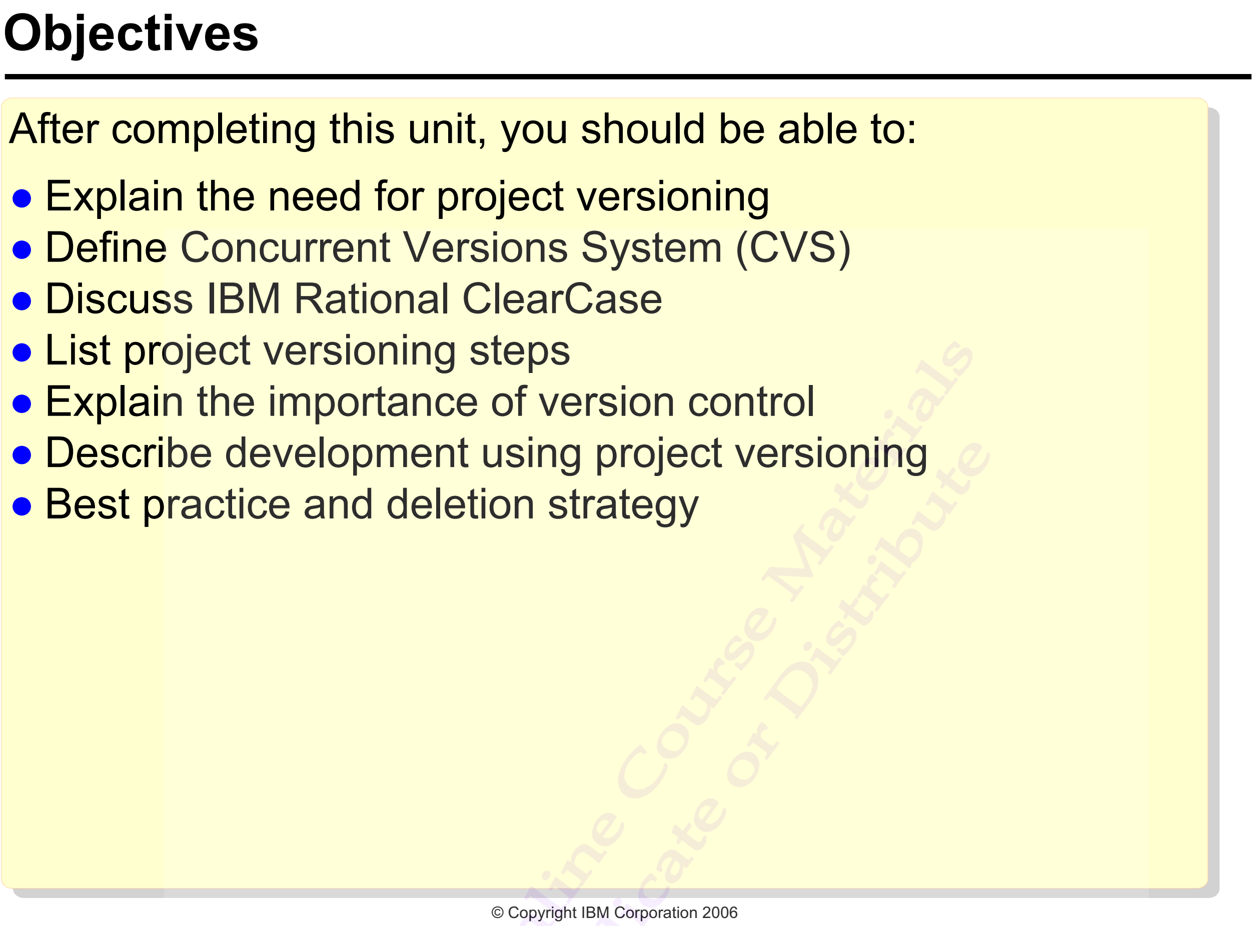
What this unit is about

This unit describes the collaboration support for version control.

What you should be able to do

After completing this unit, you should be able to:

- Explain the need for project versioning
- Define Concurrent Versions System (CVS)
- Discuss IBM Rational ClearCase
- List project versioning steps
- Explain the importance of version control
- Describe development using project versioning
- Explain the best practice and deletion strategy



Objectives

After completing this unit, you should be able to:

- Explain the need for project versioning
- Define Concurrent Versions System (CVS)
- Discuss IBM Rational ClearCase
- List project versioning steps
- Explain the importance of version control
- Describe development using project versioning
- Best practice and deletion strategy

Figure 10-1. Objectives VB1841.0

Notes:

Using version control tools with Modeler

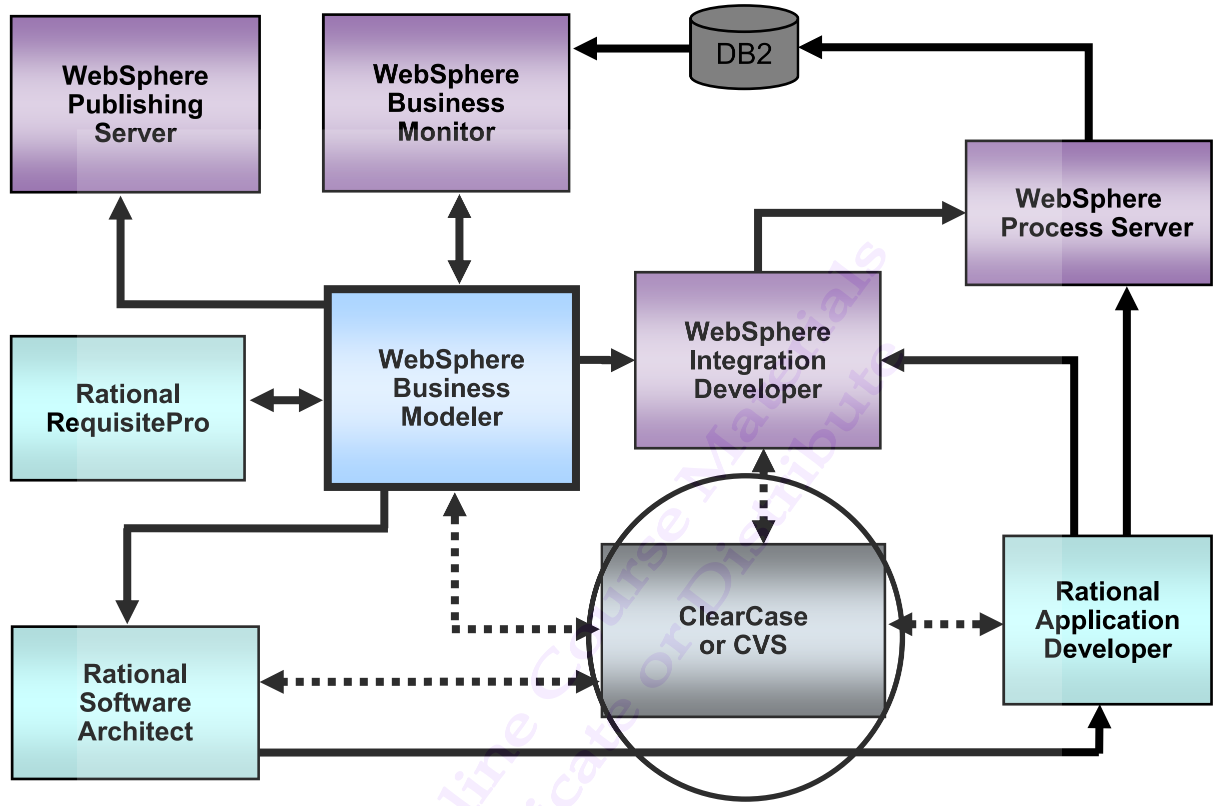

WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
Rational RequisitePro
WebSphere Business Modeler
WebSphere Integration Developer
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 10-2. Using version control tools with Modeler VB1841.0

Notes:

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)

Environments for modeling

- Single user environment
- Multi-user environment

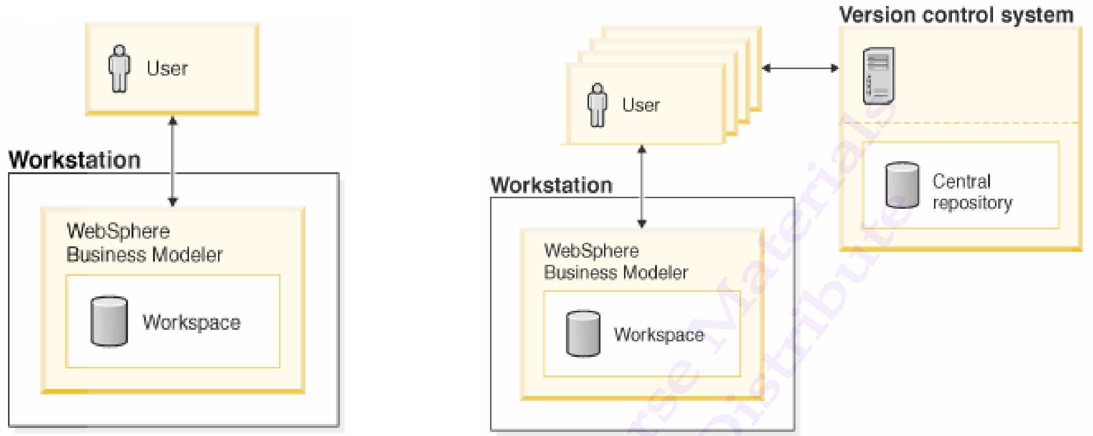


Figure 10-3. Environments for modeling VB1841.0

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Notes:

The **single user environment** is the basic environment for authoring a model. In this environment, a single user at a time builds, stores, validates, and analyzes the model. The single user environment is ideal for small scale projects in which parallel (or concurrent) development of the model does not often occur.

The **multiuser environment** supports larger projects with several users contributing to build the business process model.

Parallel development occurs when two or more users work on the model simultaneously. The danger with parallel development in the single user environment is that data loss may occur. For example, User A edits Process 1 to add Task 1, while User B edits Process 1 and adds Task 2. In this case, Process 1 will contain Task 1 or Task 2, depending on which user did the last save.

If more than one person needs to work on the model in the single user environment, they do so by exporting and importing model projects or individual model elements. For example, User A edits the model and then exports it. User B imports the model and then works on it. If the team is using importing and exporting models to share the project, the team members must closely cooperate and coordinate to avoid overwriting each other's changes and causing data loss.

Need for project versioning

- To distribute the effort of modeling or modifying an entire project among multiple team members.
  - Members can view and post project artifacts to a version control system.
  - Check out processes and create their local versions.
    - Submit their changes back when done
- Modeler can use IBM ClearCase or Concurrent Versions System (CVS) to access a version control repository on a server.
  - Maintain secured version control of project data in the repository
  - Each modification of a project element (such as process, resource, or catalog) stored as a distinct version of the original item
  - Post business modeling projects to share, view, make copies of the shared projects, and save the copies to their local machine
  - View the history of project element modifications
  - Compare two or more versions of the same item

Figure 10-4. Need for project versioning VB1841.0

Notes:

Controlling all the elements in a model

A version control system securely manages all the elements in a model individually, not as one big document.

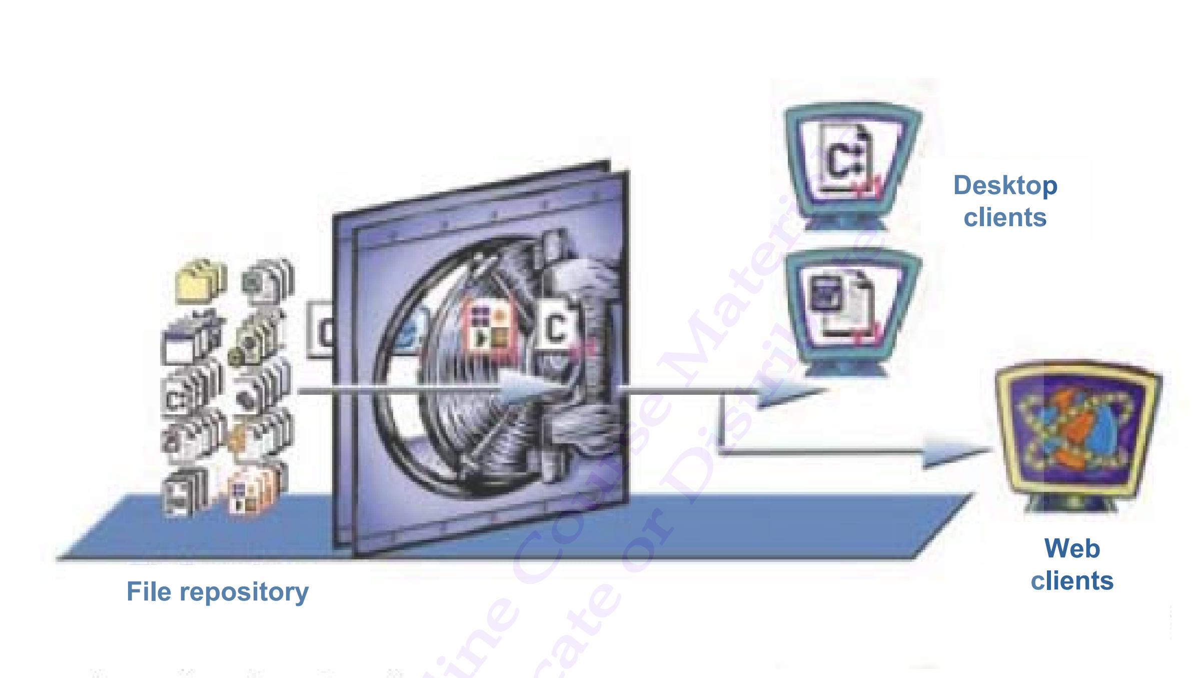


Figure 10-5. Controlling all the elements in a model VB1841.0

Notes:

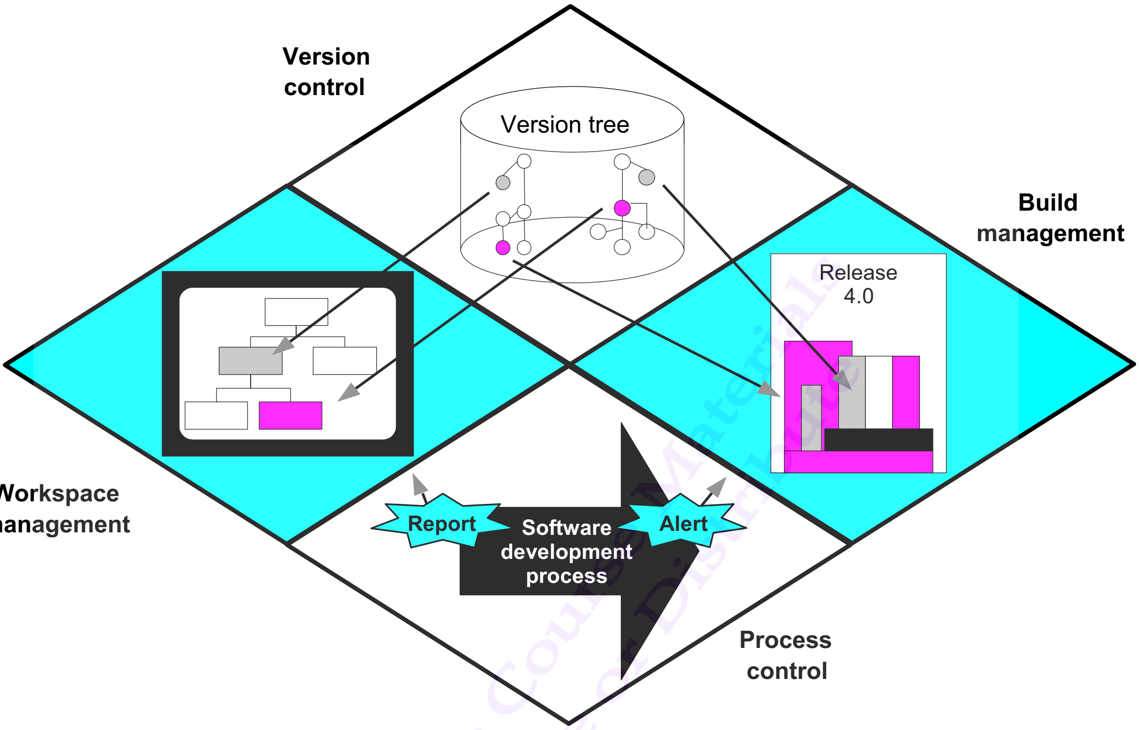
Concurrent Versions System (CVS)

- Used to address code versioning issues
- Primarily a LowerCASE tool
  - Computer-Aided Software Engineering (CASE) software tool
  - Supports the modeling and integration of tasks
- Primarily used in development
- Most commonly used code versioning and storage system today
  - Built from OpenSource projects
- Common best uses for CVS
  - Medium to large size projects separated across geographic distances
  - Useful as court evidence to demonstrate original work
  - Source code version history

Figure 10-6. Concurrent Versions System (CVS) VB1841.0

Notes:

IBM Rational ClearCase



Version control

Version tree

Build management

Release 4.0

Workspace management

Report

Software development process

Alert

Process control

Software configuration management

Figure 10-7. IBM Rational ClearCase VB1841.0

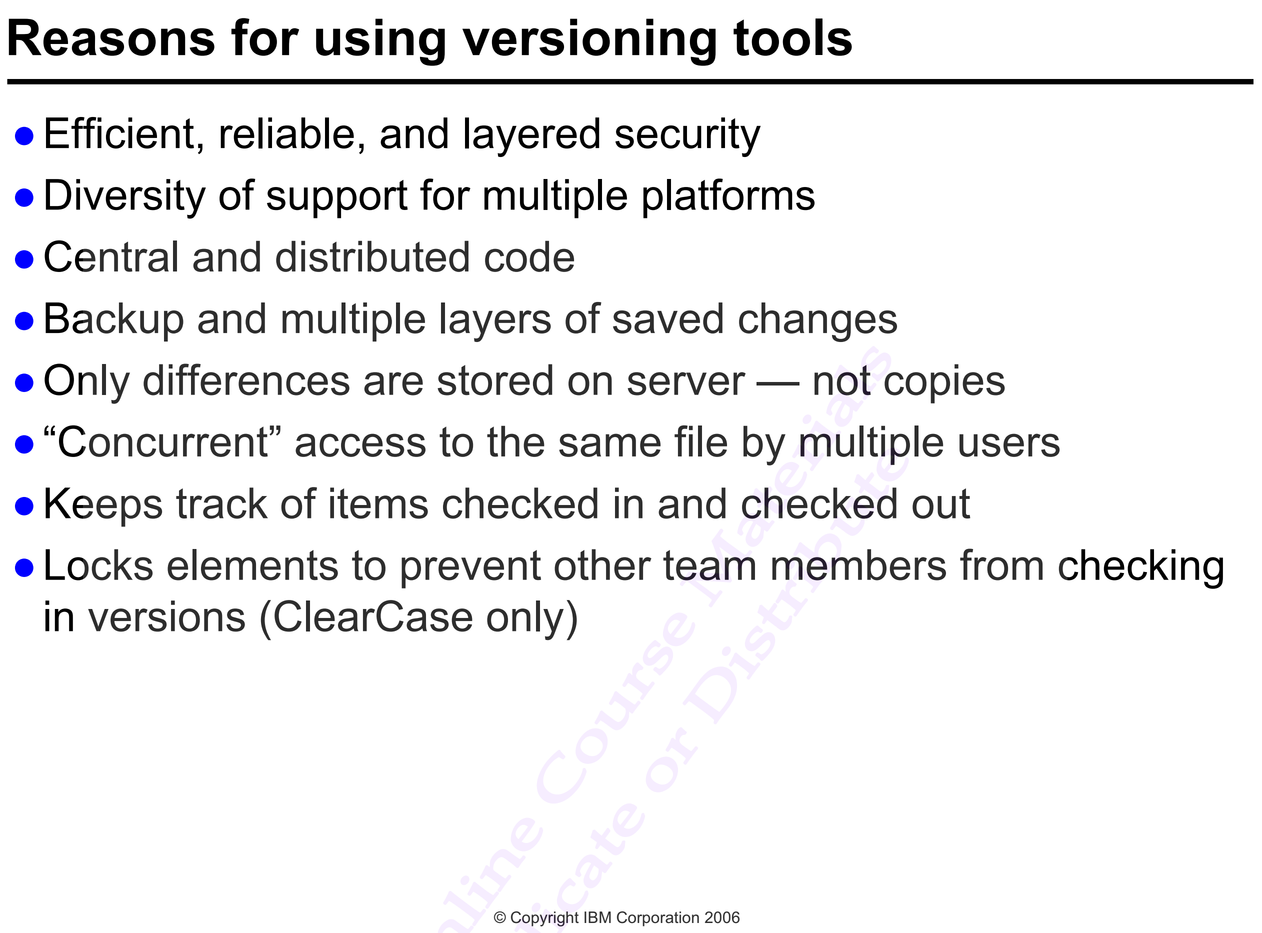
Notes:

IBM Rational ClearCase

- The ClearCase design:
  - Creates versions of all types of files and directories
  - Records and reports the actions, history, and milestones
  - Reproduces accurately every release
  - Traces and reproduces builds
  - Assures the integrity of all software elements
- ClearCase is an integrated system, but it is useful to group its features into four functional groups:
  - Workspace management
  - Version control
  - Build management
  - Process control

Figure 10-8. IBM Rational ClearCase VB1841.0

Notes:

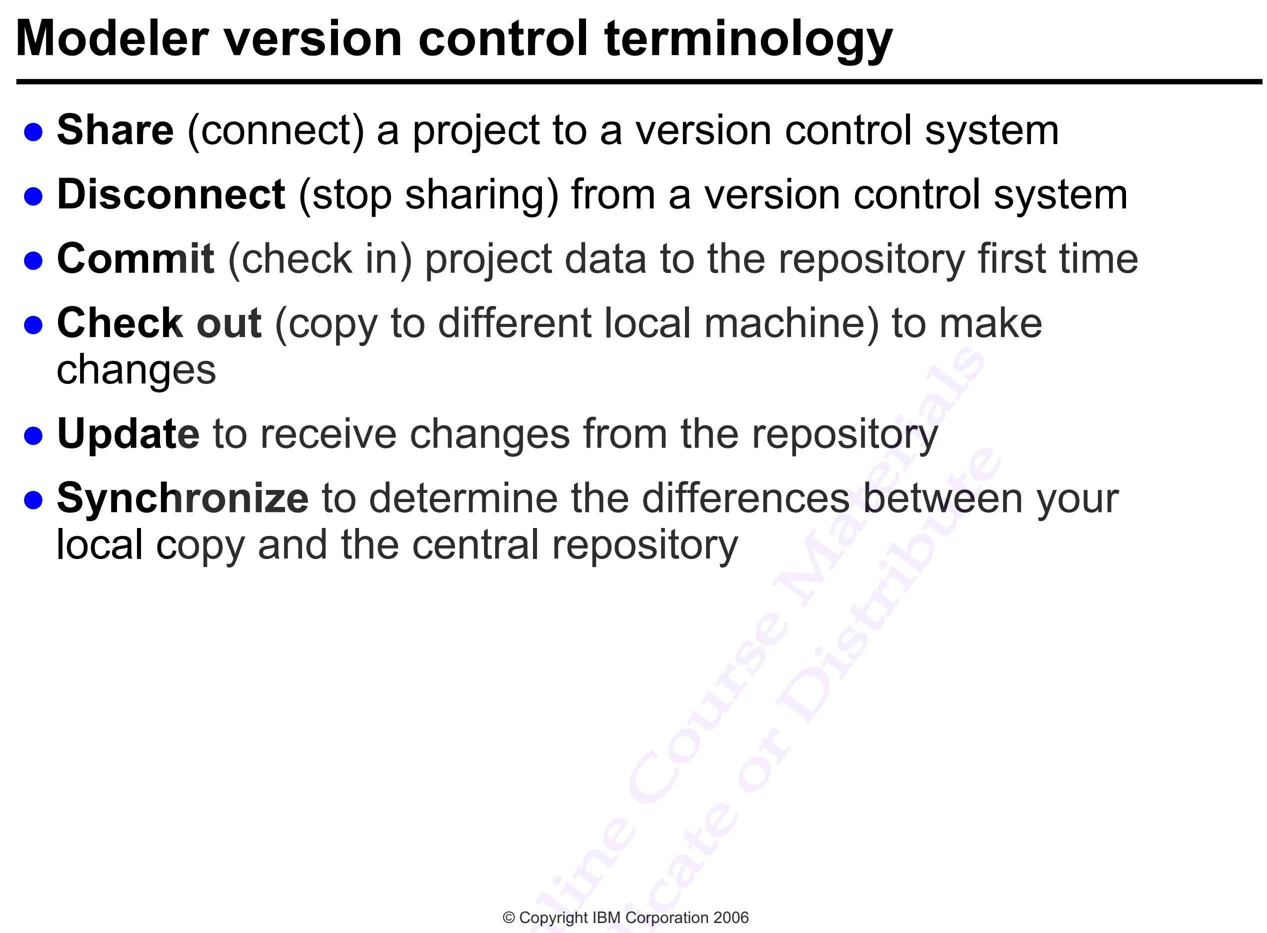


Reasons for using versioning tools

- Efficient, reliable, and layered security
- Diversity of support for multiple platforms
- Central and distributed code
- Backup and multiple layers of saved changes
- Only differences are stored on server — not copies
- “Concurrent” access to the same file by multiple users
- Keeps track of items checked in and checked out
- Locks elements to prevent other team members from checking in versions (ClearCase only)

Figure 10-9. Reasons for using versioning tools VB1841.0

Notes:

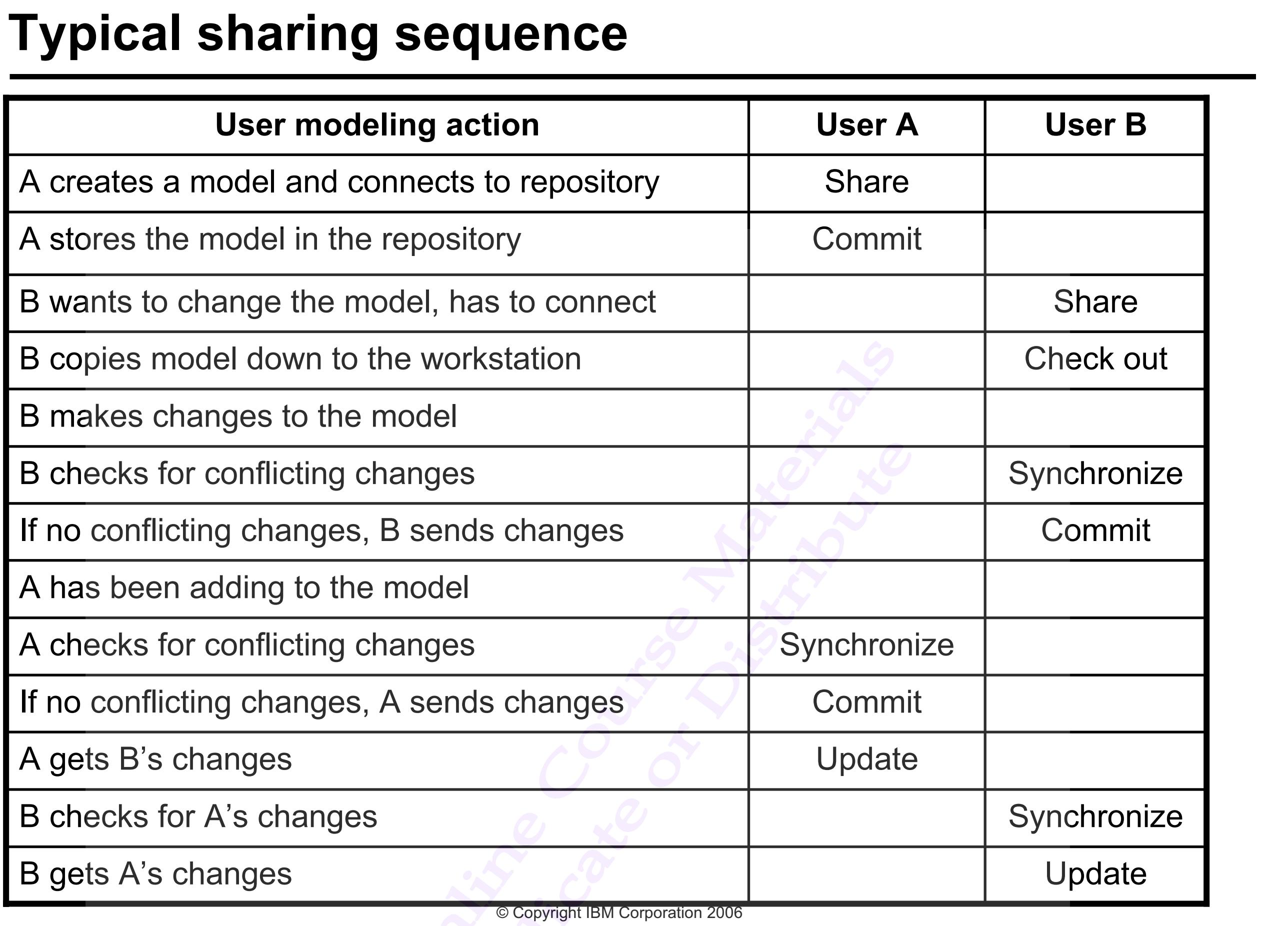


Modeler version control terminology

- **Share** (connect) a project to a version control system
- **Disconnect** (stop sharing) from a version control system
- **Commit** (check in) project data to the repository first time
- **Check out** (copy to different local machine) to make changes
- **Update** to receive changes from the repository
- **Synchronize** to determine the differences between your local copy and the central repository

Figure 10-10. Modeler version control terminology VB1841.0

Notes:



Typical sharing sequence

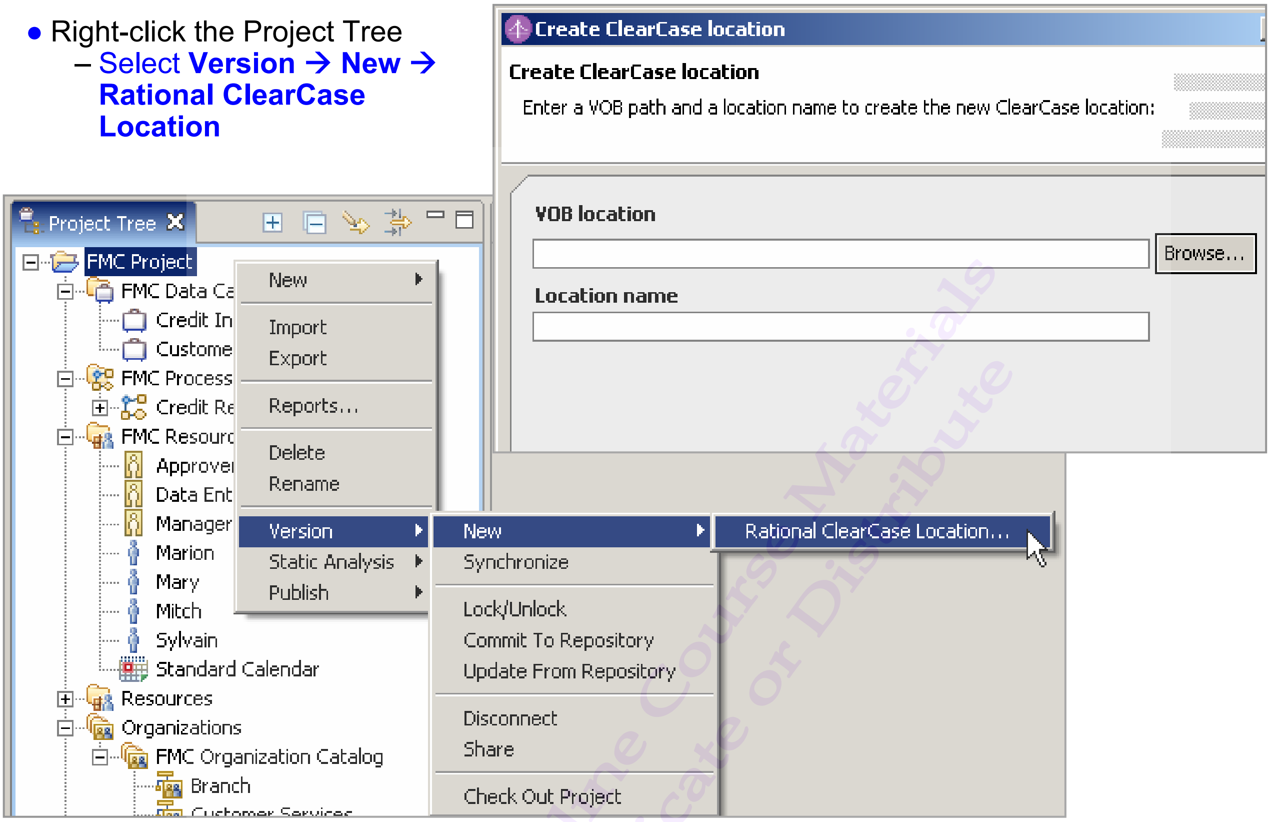
User modeling action	User A	User B
A creates a model and connects to repository	Share	
A stores the model in the repository	Commit	
B wants to change the model, has to connect		Share
B copies model down to the workstation		Check out
B makes changes to the model		
B checks for conflicting changes		Synchronize
If no conflicting changes, B sends changes		Commit
A has been adding to the model		
A checks for conflicting changes	Synchronize	
If no conflicting changes, A sends changes	Commit	
A gets B’s changes	Update	
B checks for A’s changes		Synchronize
B gets A’s changes		Update

Figure 10-11. Typical sharing sequence VB1841.0

Notes:

Adding a ClearCase repository

- Right-click the Project Tree
  - Select **Version → New → Rational ClearCase Location**



Create ClearCase location

Enter a VOB path and a location name to create the new ClearCase location:

VOB location

Location name

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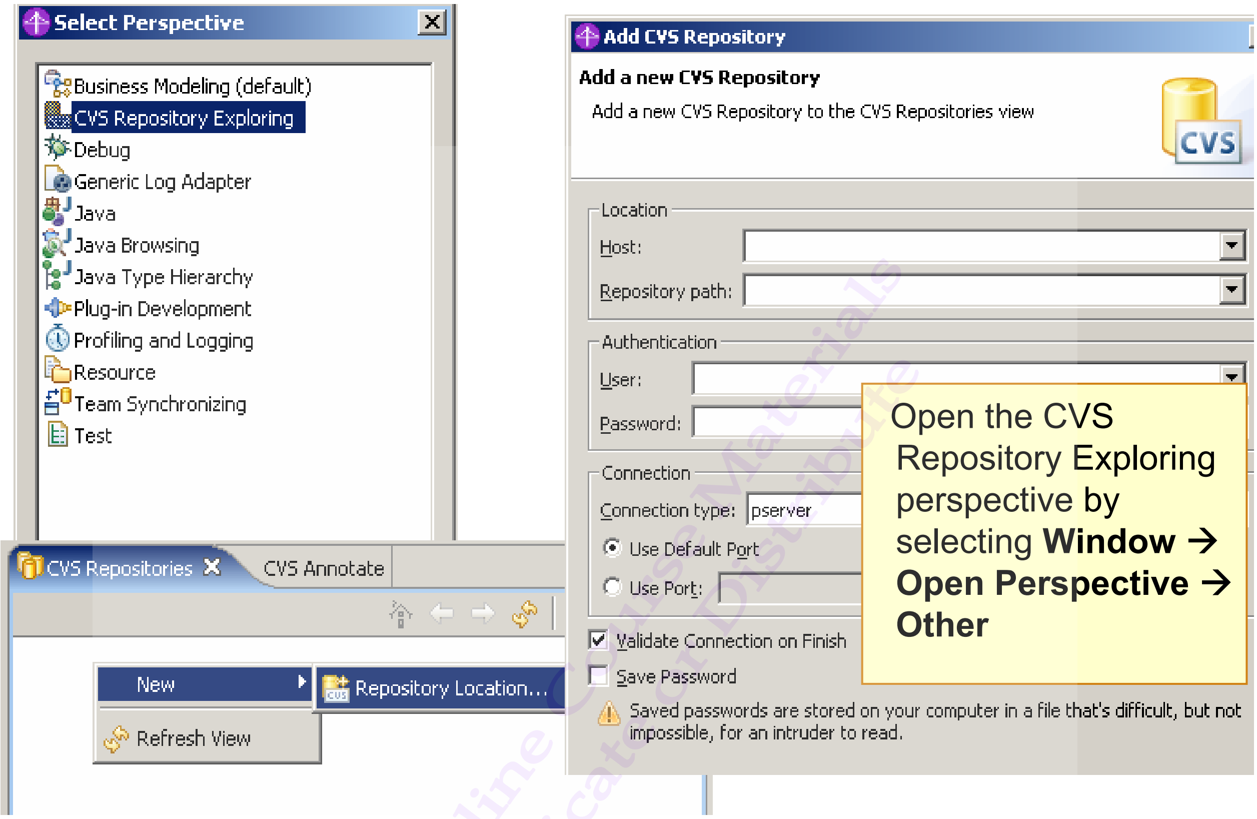
Figure 10-12. Adding a ClearCase repository VB1841.0

Notes:

Adding a CVS repository



Add a new CVS Repository

Add a new CVS Repository to the CVS Repositories view

Connection type: pserver

● Use Default Port

○ Use Port:

☑ Validate Connection on Finish

☐ Save Password

Saved passwords are stored on your computer in a file that's difficult, but not impossible, for an intruder to read.

Open the CVS Repository Exploring perspective by selecting **Window → Open Perspective → Other**

Figure 10-13. Adding a CVS repository VB1841.0

Notes:

Project sharing

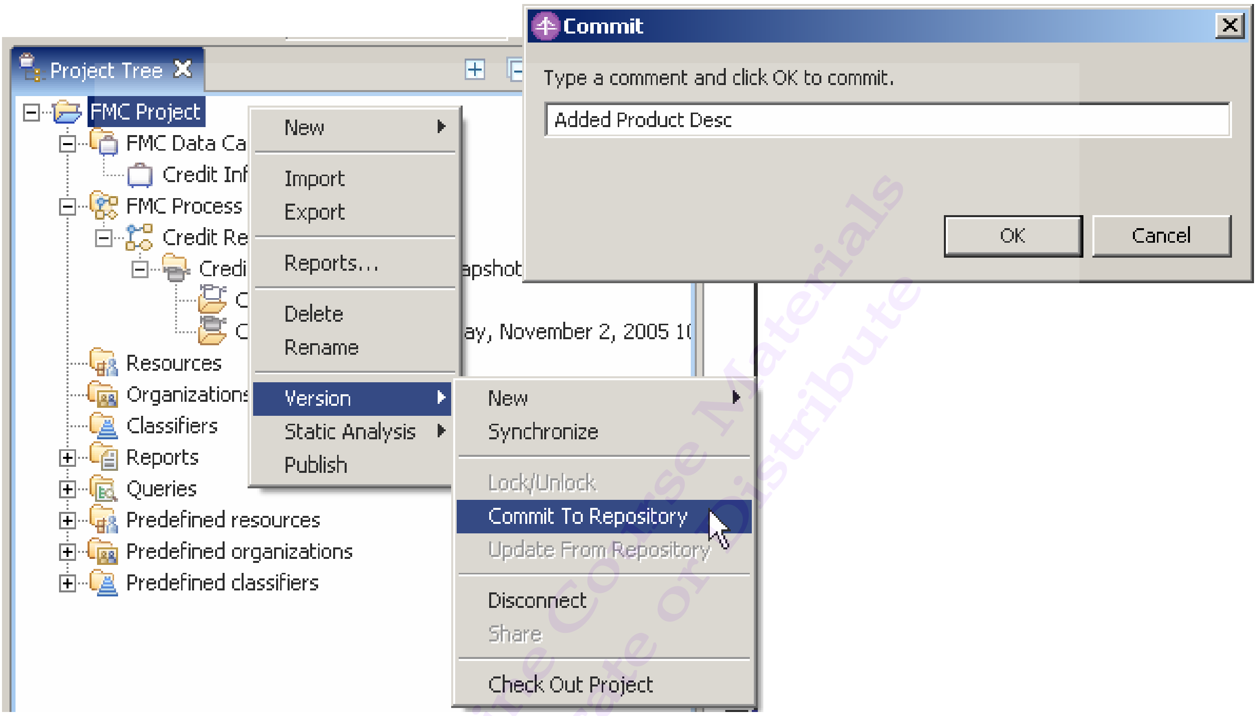
- To share a local project:
  - Establish the connection to the version control system.
  - Create the structure to store the project's data.
- Once connected, send (commit) project data to the version control system.
  - Copy the committed data from the workspace on your local machine to the version control repository.
- Users do not have to commit all of the project's data (model elements).
- Local machine keeps all of the project data whether some or all of the data are committed.
- All authorized team members can access the committed data.
  - Check it out of the version control system using the project versioning component of WebSphere Business Modeler.

Figure 10-14. Project sharing VB1841.0

Notes:

Commit to repository

- Once the modification is made, commit changes back to the repository.



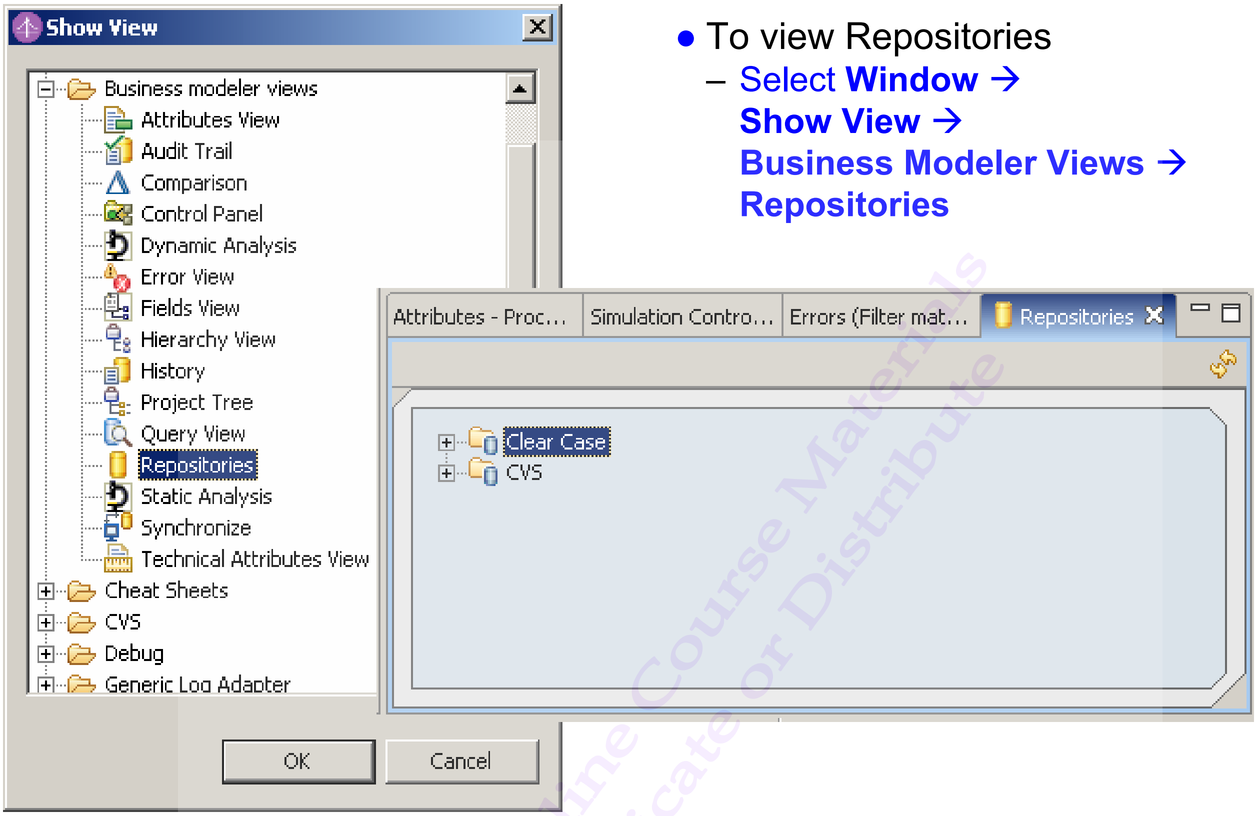
Type a comment and click OK to commit.

Added Product Desc

Figure 10-15. Commit to repository VB1841.0

Notes:

Repository view



- To view Repositories
  - Select **Window →**
    Show View →
    Business Modeler Views →
    Repositories

Figure 10-16. Repository view VB1841.0

Notes:

Checking out a project

- From the **Repository view**
- Any registered repository server will be displayed in the view
- Right-click the desired project
- Select: **Check Out Project**
  - Cannot check out a project that already exists in the Modeler workspace

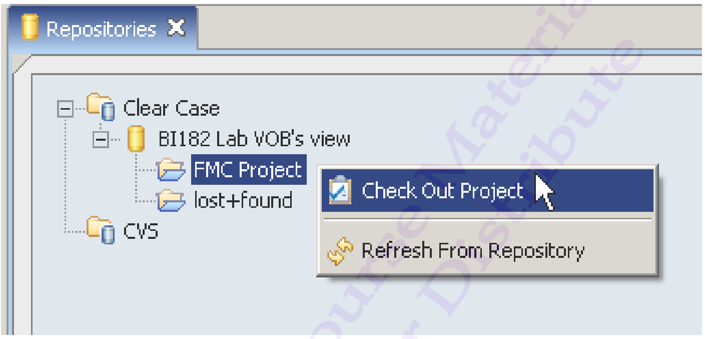


Figure 10-17. Checking out a project VB1841.0

Notes:

Version control

- After the initial commit, model elements are kept synchronized.
  - The same elements in both local machine and repository locations
- The repository increases the version number every time someone commits a change to the model element.
- The workspace maintains the same version number until the user commits a change to the model element or updates it from the repository.

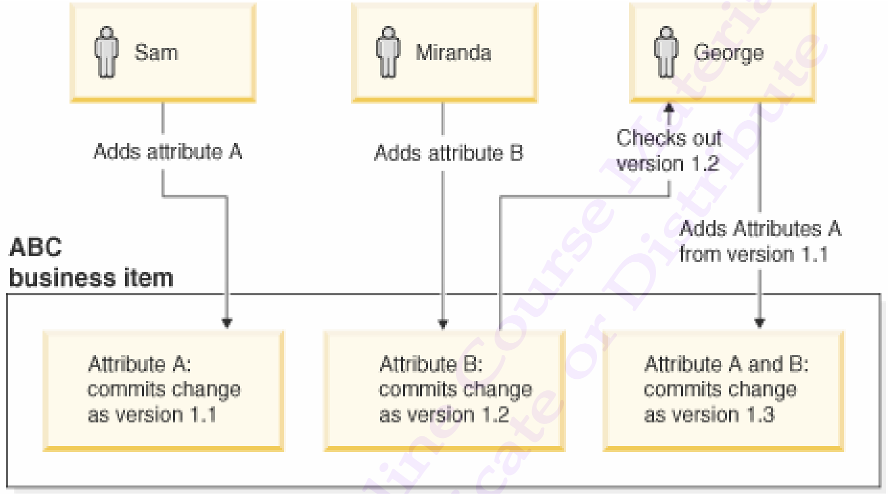

Sam
Miranda
George
Adds attribute A
Adds attribute B
Checks out version 1.2
Adds Attributes A from version 1.1
ABC business item
Attribute A: commits change as version 1.1
Attribute B: commits change as version 1.2
Attribute A and B: commits change as version 1.3

Figure 10-18. Version control VB1841.0

Notes:

In this example, Sam and Miranda both have checked out 1.0 independently.

So there is a copy on Sam's computer and a copy on Miranda's computer.

When Sam adds Attribute A and commits, Miranda's copy is **not** updated.

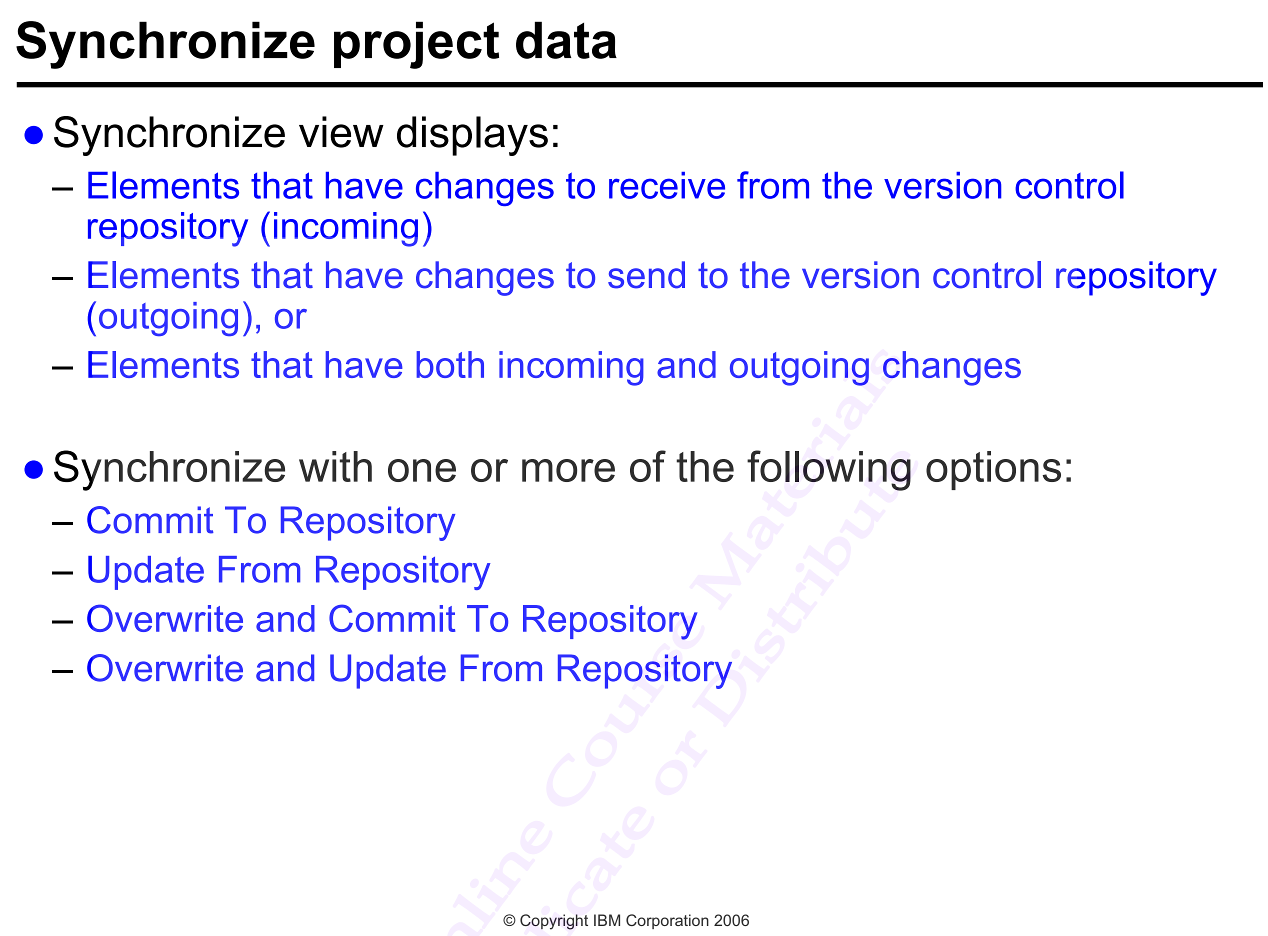
Similarly, Sam's copy is not updated when Miranda commits.

However, as Miranda has committed after Sam, it is her version that is the most current in the repository.

Sam's copy exists as an earlier version.

George is reconciling the two different versions to create a third version.

In the example, he is adding the Attribute A that exists in Sam's version to Miranda's version so that it has two attributes, A and B.



Synchronize project data

- Synchronize view displays:
  - Elements that have changes to receive from the version control repository (incoming)
  - Elements that have changes to send to the version control repository (outgoing), or
  - Elements that have both incoming and outgoing changes
- Synchronize with one or more of the following options:
  - Commit To Repository
  - Update From Repository
  - Overwrite and Commit To Repository
  - Overwrite and Update From Repository

Figure 10-19. Synchronize project data VB1841.0

Notes:

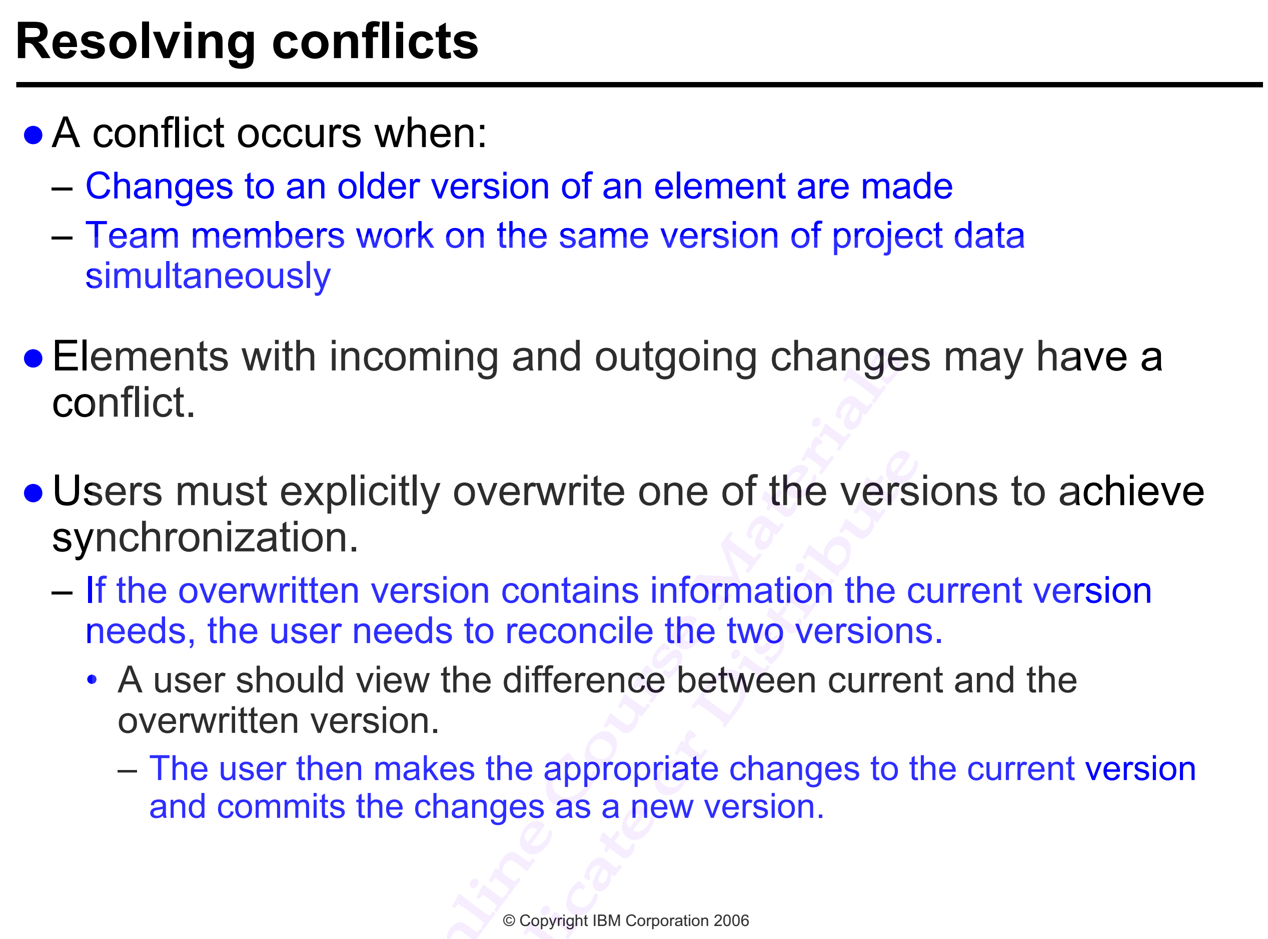
Update versus synchronize

- Update retrieves the latest version of the elements in the catalog or project from the repository.

- Synchronize compares the local contents of the catalog or project with the contents of the repository.
  - When a user synchronizes, Synchronize view displays all new elements that other users have added.
    - Update does not include any new elements from other users, unless the user synchronizes first.

Figure 10-20. Update versus synchronize VB1841.0

Notes:



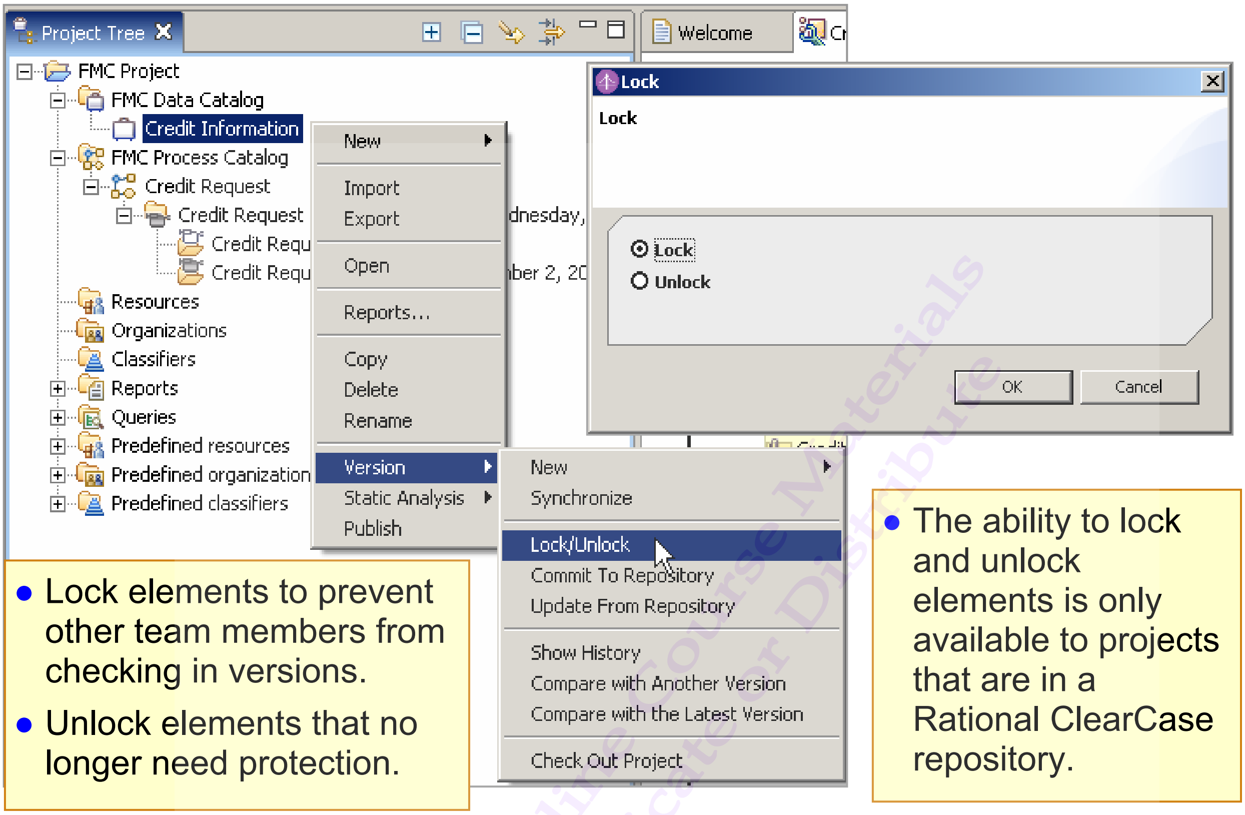
Resolving conflicts

- A conflict occurs when:
  - Changes to an older version of an element are made
  - Team members work on the same version of project data simultaneously
- Elements with incoming and outgoing changes may have a conflict.
- Users must explicitly overwrite one of the versions to achieve synchronization.
  - If the overwritten version contains information the current version needs, the user needs to reconcile the two versions.
    - A user should view the difference between current and the overwritten version.
      - The user then makes the appropriate changes to the current version and commits the changes as a new version.

Figure 10-21. Resolving conflicts VB1841.0

Notes:

Locking and unlocking elements: ClearCase



◉ Lock
○ Unlock

- Lock elements to prevent other team members from checking in versions.
- Unlock elements that no longer need protection.

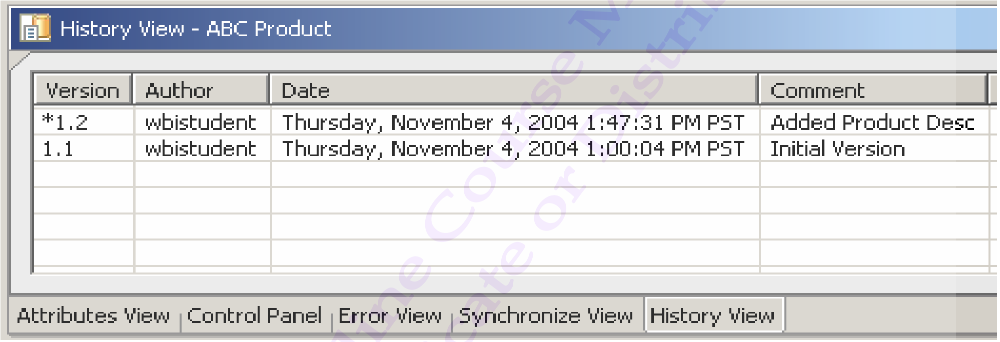
- The ability to lock and unlock elements is only available to projects that are in a Rational ClearCase repository.

Figure 10-22. Locking and unlocking elements: ClearCase VB1841.0

Notes:

Viewing the history of a component

- After modifications to a project are committed to a repository, a comparison can be made between the local workspace and the repository original.
- Project versioning function can restore previous versions of components.
  - A persistent undo function
- Can compare multiple versions.
  - Right-click a component and select **Version → Show History**



Version	Author	Date	Comment
*1.2	wbistudent	Thursday, November 4, 2004 1:47:31 PM PST	Added Product Desc
1.1	wbistudent	Thursday, November 4, 2004 1:00:04 PM PST	Initial Version

Figure 10-23. Viewing the history of a component VB1841.0

Notes:

Comparing versions

- **History view** displays all revisions of the component.

- Select two versions, and right-click for the context menu to compare.
  - If three or more versions are selected, Audit Trail becomes active.
  - If only one version is selected, the Get Content command is enabled.

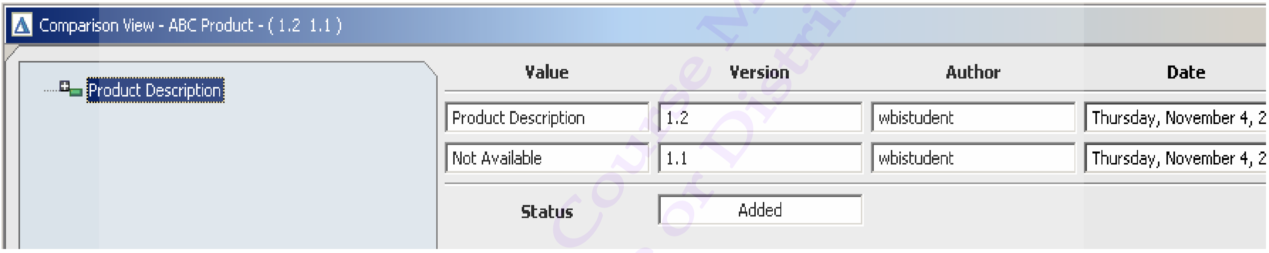
Figure 10-24. Comparing versions VB1841.0

Notes:

Comparison view

- The Comparison view will show the information of the two versions.
  - Date: date change took place
  - Author: user who made the change
  - Version: version number
  - Value: actual data for each version
  - Status: status of change (for example, Added or Updated)

- The value “Not Available” with “Added” status indicates that the “Product Description” was a new item that did not exist before.



Comparison View - ABC Product - (1.2 1.1)

Product Description

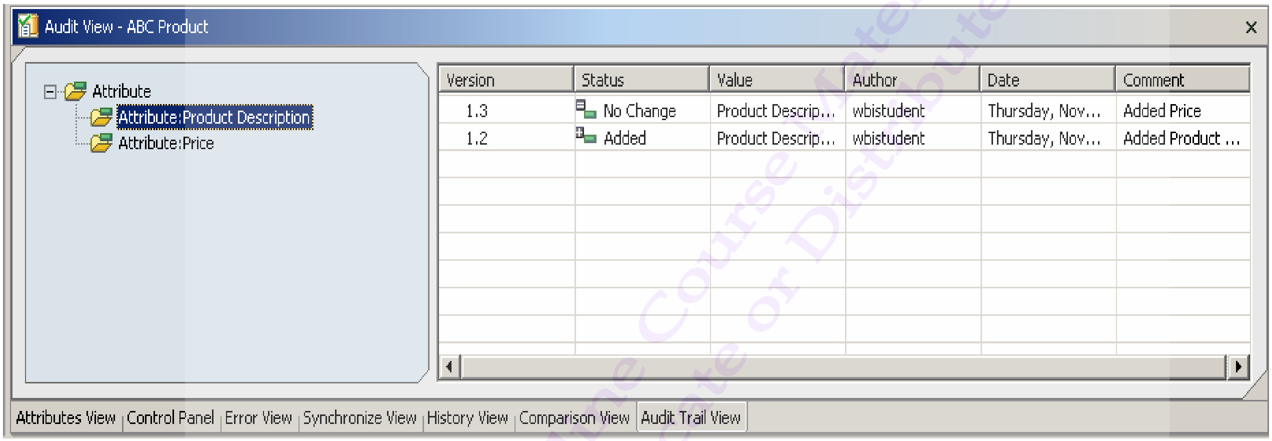
Value	Version	Author	Date
Product Description	1.2	wbistudent	Thursday, November 4, 2
Not Available	1.1	wbistudent	Thursday, November 4, 2
Status	Added		

Figure 10-25. Comparison view VB1841.0

Notes:

Audit trail

- To display additional details of versions in an audit trail:
  - In the Business Modeling perspective, right-click the element to display.
    - Select **Team → Show History** on the context menu for **History view**.
      - Select three or more versions, and then right-click one of them to view history.
    - Click **Audit Trail** on the context menu for the **Audit Trail view**.
      - In the **Audit Trail view**, right-click the newer version.
      - Select **Show Details** for the **Comparison view**.



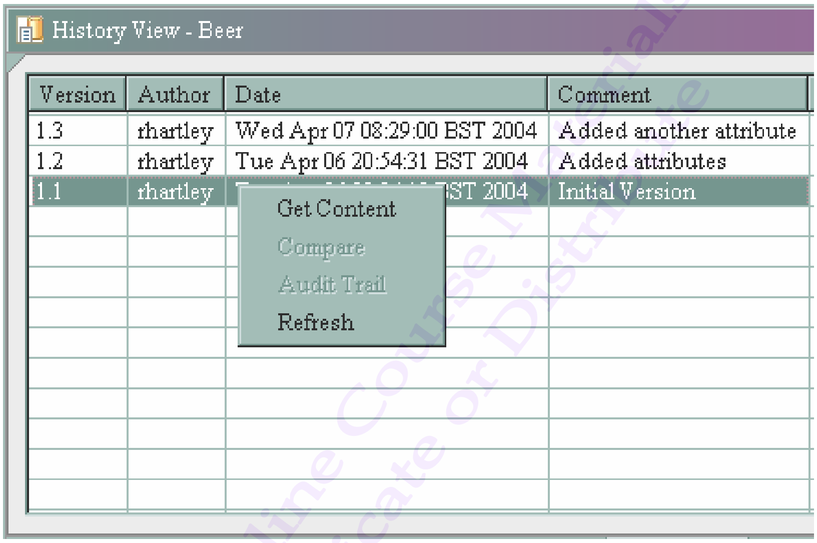
Version	Status	Value	Author	Date	Comment
1.3	No Change	Product Descrip...	wbistudent	Thursday, Nov...	Added Price
1.2	Added	Product Descrip...	wbistudent	Thursday, Nov...	Added Product ...

Figure 10-26. Audit trail VB1841.0

Notes:

Get content

- The Get Content command will retrieve a specific version of a component to the local workspace and overwrite any local changes.
- Local changes must be committed to the repository before issuing this command to save the changes.

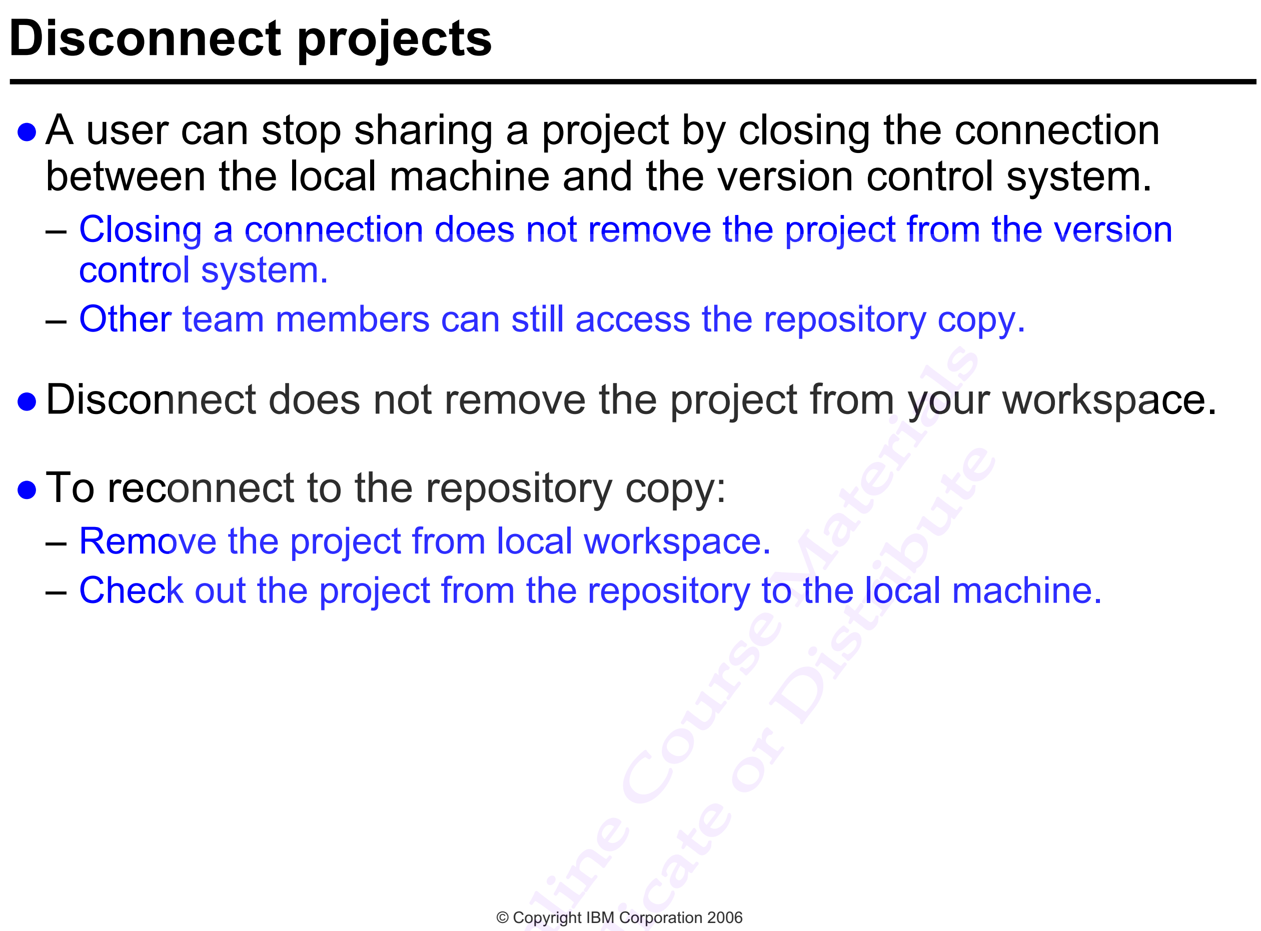


History View - Beer

Version	Author	Date	Comment
1.3	rhartley	Wed Apr 07 08:29:00 BST 2004	Added another attribute
1.2	rhartley	Tue Apr 06 20:54:31 BST 2004	Added attributes
1.1	rhartley	ST 2004	Initial Version

Figure 10-27. Get content VB1841.0

Notes:

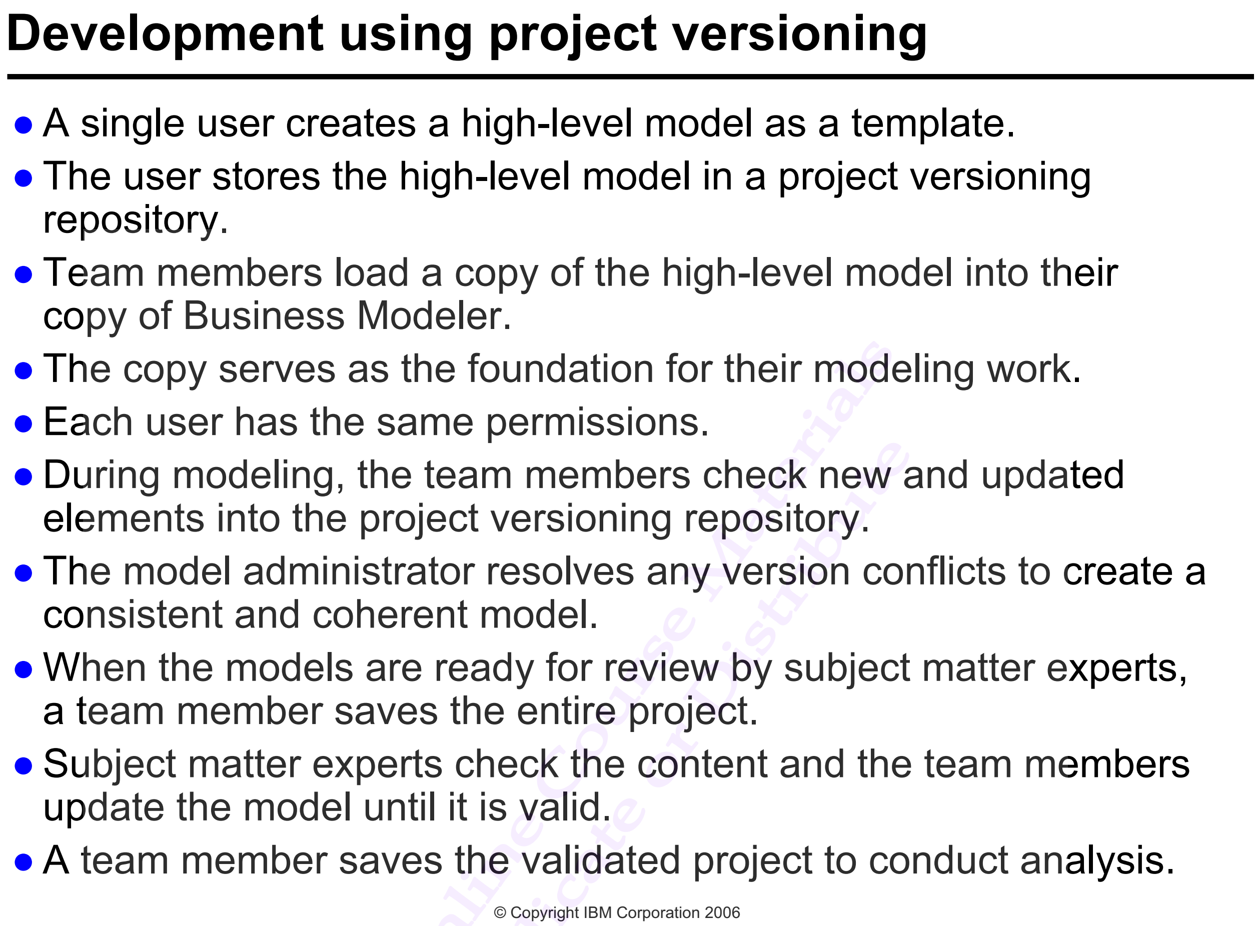


Disconnect projects

- A user can stop sharing a project by closing the connection between the local machine and the version control system.
  - Closing a connection does not remove the project from the version control system.
  - Other team members can still access the repository copy.
- Disconnect does not remove the project from your workspace.
- To reconnect to the repository copy:
  - Remove the project from local workspace.
  - Check out the project from the repository to the local machine.

Figure 10-28. Disconnect projects VB1841.0

Notes:



Development using project versioning

- A single user creates a high-level model as a template.
- The user stores the high-level model in a project versioning repository.
- Team members load a copy of the high-level model into their copy of Business Modeler.
- The copy serves as the foundation for their modeling work.
- Each user has the same permissions.
- During modeling, the team members check new and updated elements into the project versioning repository.
- The model administrator resolves any version conflicts to create a consistent and coherent model.
- When the models are ready for review by subject matter experts, a team member saves the entire project.
- Subject matter experts check the content and the team members update the model until it is valid.
- A team member saves the validated project to conduct analysis.

Figure 10-29. Development using project versioning VB1841.0

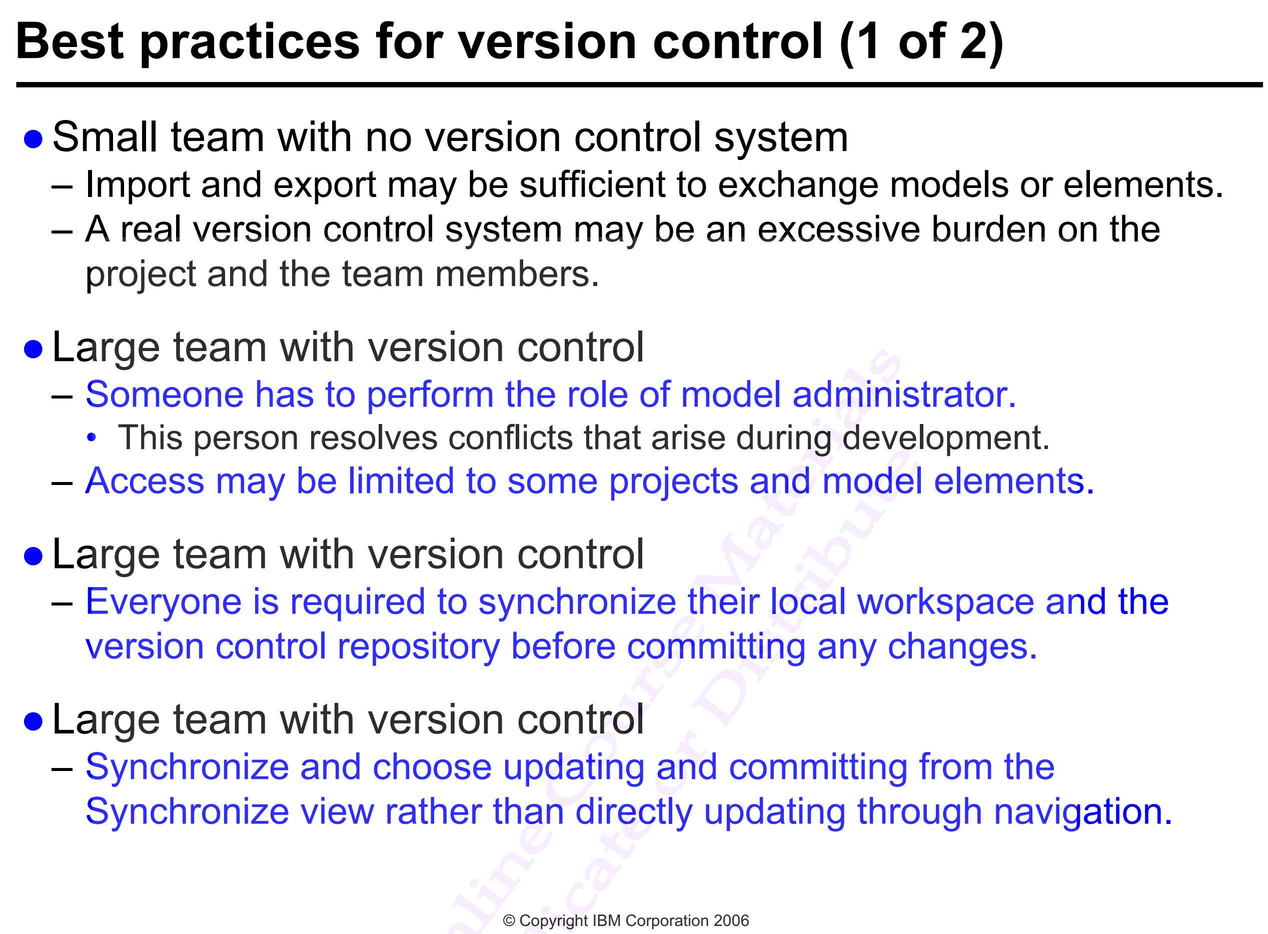
Notes:

With a large team, you may want to limit access of team members to certain projects or model elements. You need to balance the value of having a common repository for all process models so that team members can share them with the need to manage and control changes. Limiting access provides a way of managing and controlling changes and also tailoring the model content to fit the needs of the user. The factors that govern who should have access to what are: the project phase, what the user needs to do in that phase, and the role that the user is fulfilling. Access can be limited through setting the operating system permissions on the file structure used by the project versioning system or by creating a unique project for a user or set of users.

Conduct analysis with current versus future

1. The members of the modeling team get the validated project and perform analysis on it. The team members update the model again as needed.
2. A team member saves the updated validated project. This is now the current state model.

3. The modeling team creates and updates the future state model. As before, the model administrator also resolves any version conflicts to create a consistent and coherent model.
4. A team member saves the future state model.
5. The modeling team compares the current state model with the future state model. The modeling team updates the future state model based on the results of the comparison analysis. This step may repeat several times to determine the best future state.
6. A team member saves the future state model.
7. A team member may export information from the future state model to facilitate implementing the future state.



Best practices for version control (1 of 2)

- Small team with no version control system
  - Import and export may be sufficient to exchange models or elements.
  - A real version control system may be an excessive burden on the project and the team members.
- Large team with version control
  - Someone has to perform the role of model administrator.
    - This person resolves conflicts that arise during development.
  - Access may be limited to some projects and model elements.
- Large team with version control
  - Everyone is required to synchronize their local workspace and the version control repository before committing any changes.
- Large team with version control
  - Synchronize and choose updating and committing from the Synchronize view rather than directly updating through navigation.

Figure 10-30. Best practices for version control (1 of 2) VB1841.0

Notes:

Best practices for version control (2 of 2)

- Large team with version control
  - Use lock capabilities provided by the version control system when available.
    - Understand and test what happens once the lock is released.
- Large team with version control
  - Develop a process to remove elements from shared models.
    - If you remove an element such as a business item or process from a shared project in the Project Tree view, other users sharing the project must delete the element from their local workspace.
- Large team with version control
  - Develop a shared element removal naming convention.
    - It is important to establish a naming convention for flagging elements to be removed.
    - Someone must take on the role of physically removing elements flagged for removal at agreed upon times.

Figure 10-31. Best practices for version control (2 of 2) VB1841.0

Notes:

Deletion strategies

- Mark element for removal
- Broadcasting change
- Import and export

Figure 10-32. Deletion strategies VB1841.0

Notes:

Mark element for removal (1 of 8)

Need to remove “Order billing” from all workstations.

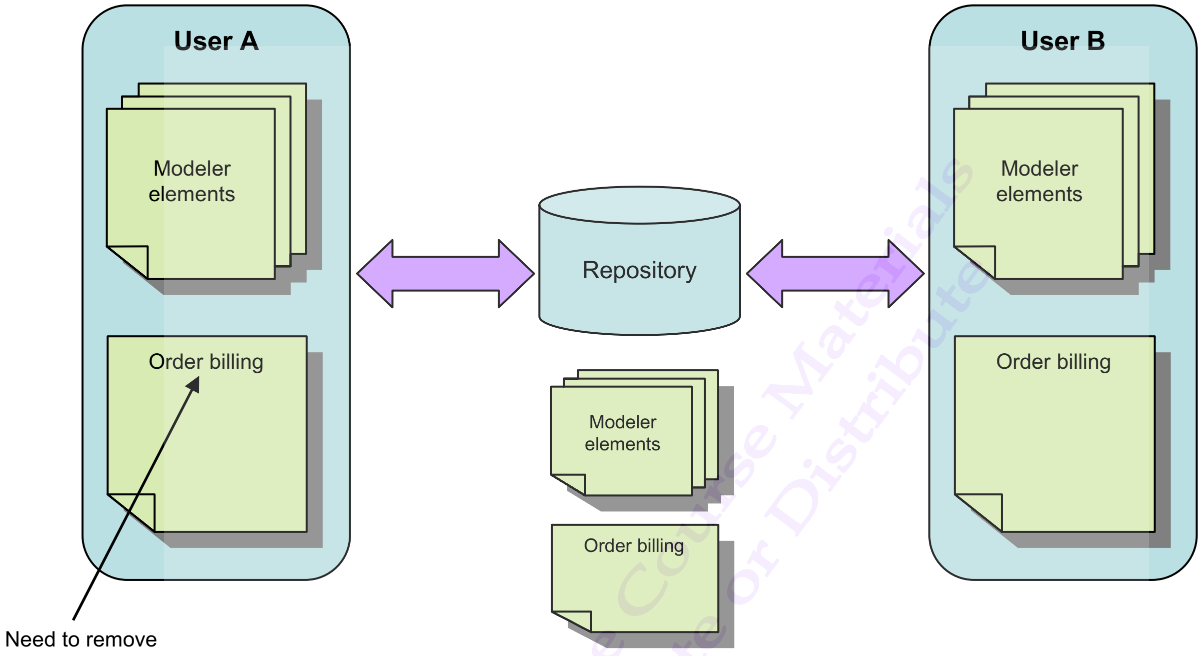


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Figure 10-33. Mark element for removal (1 of 8) VB1841.0

Notes:

Mark element for removal (2 of 8)

Flag “Order billing” for removal by renaming it.

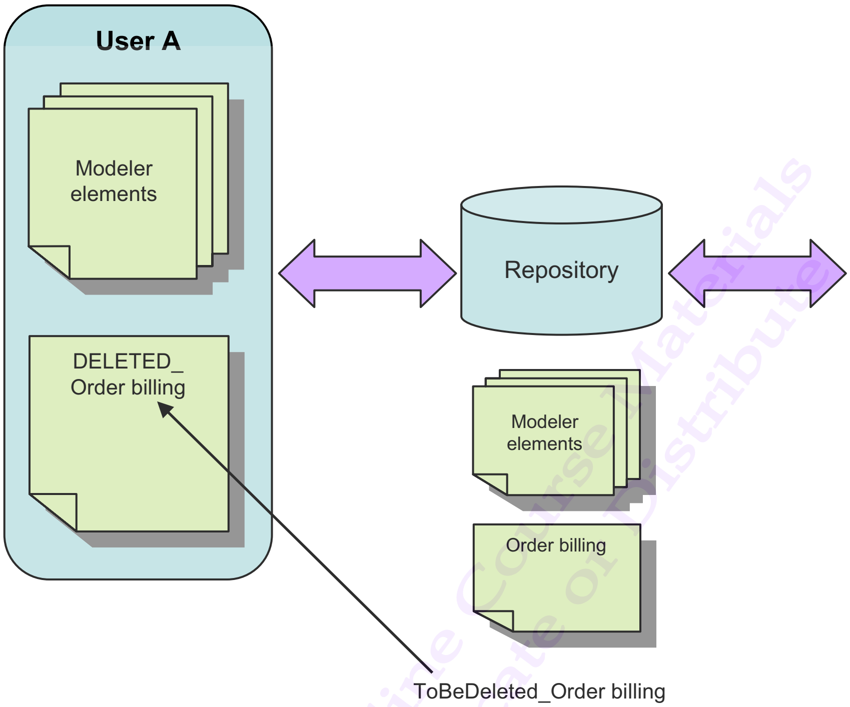

Figure 10-34. Mark element for removal (2 of 8) VB1841.0

Notes:

Mark element for removal (3 of 8)

Commit changes to repository to rename in repository.

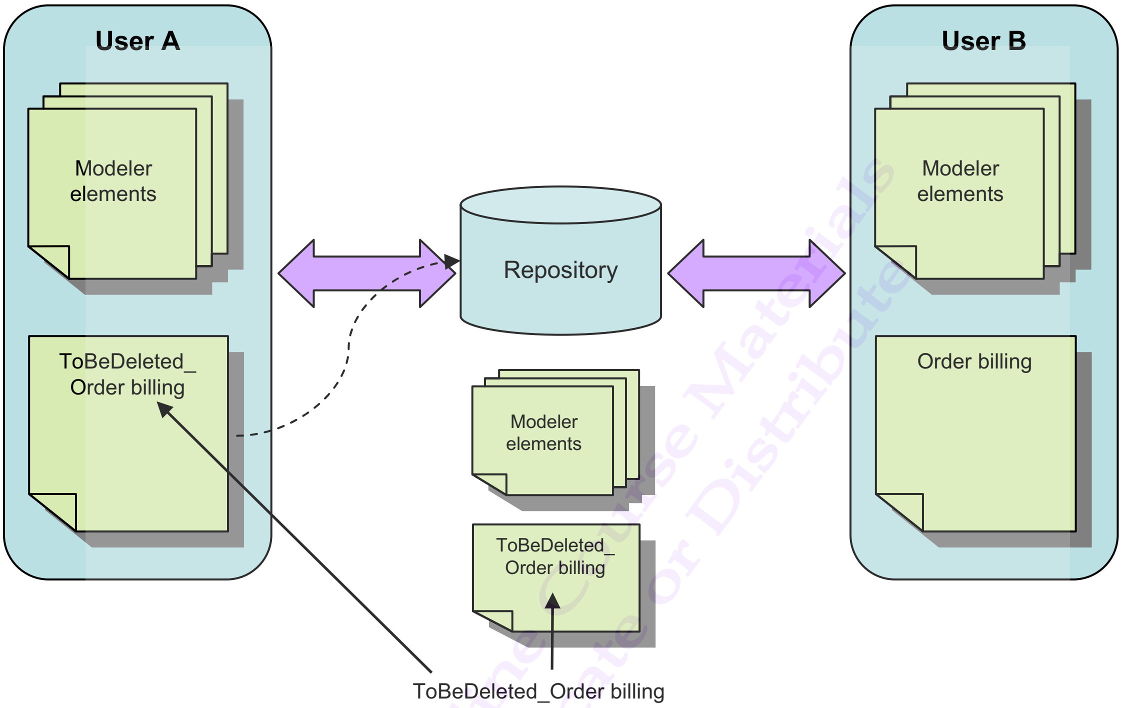

Figure 10-35. Mark element for removal (3 of 8) VB1841.0

Notes:

Mark element for removal (4 of 8)

Update all workstations to receive the renamed element.

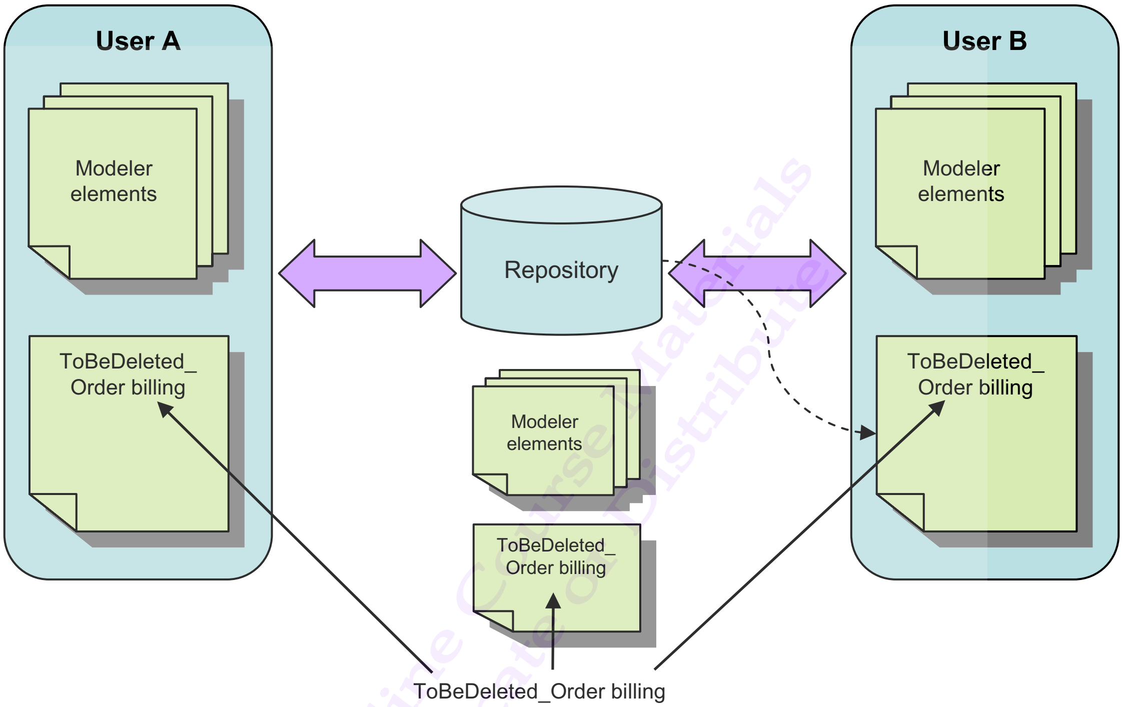
User A
Modeler elements
ToBeDeleted_ Order billing
Repository
Modeler elements
ToBeDeleted_ Order billing
User B
Modeler elements
ToBeDeleted_ Order billing
ToBeDeleted_Order billing

Figure 10-36. Mark element for removal (4 of 8) VB1841.0

Notes:

Mark element for removal (5 of 8)

Notify everyone and wait until everyone agrees the element can be removed.

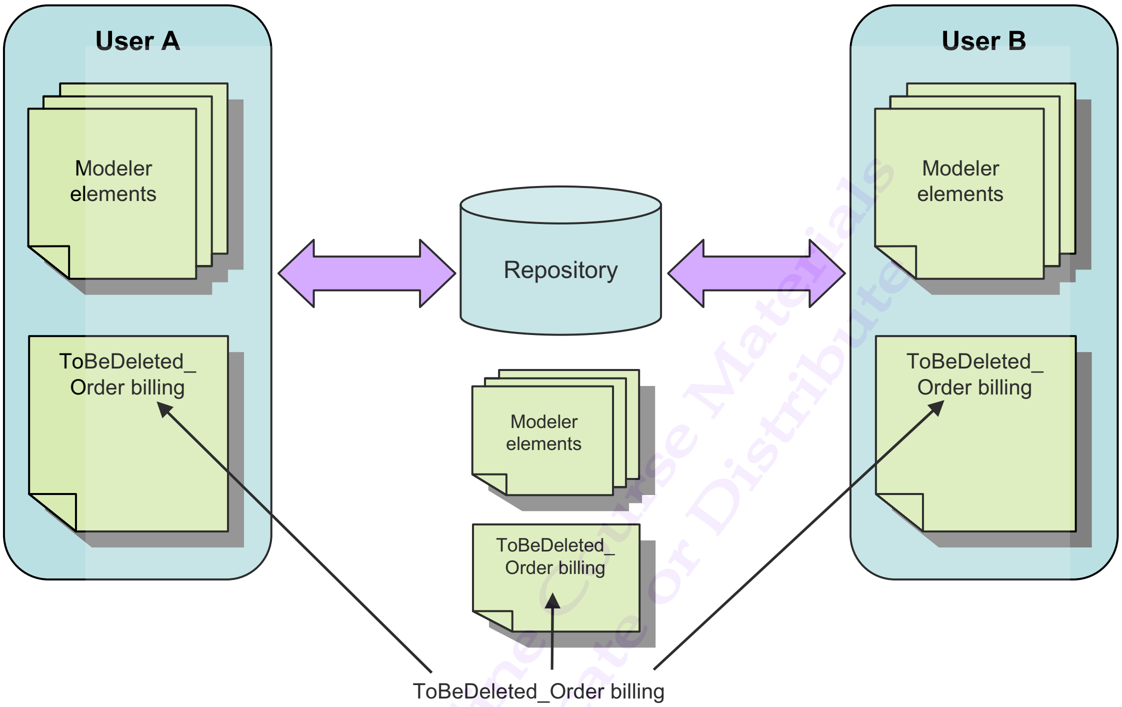
User A
Modeler elements
ToBeDeleted_ Order billing
Repository
Modeler elements
ToBeDeleted_ Order billing
User B
Modeler elements
ToBeDeleted_ Order billing
ToBeDeleted_Order billing

Figure 10-37. Mark element for removal (5 of 8)

VB1841.0

Notes:

Mark element for removal (6 of 8)

Remove, commit to repository, and notify everyone to delete.

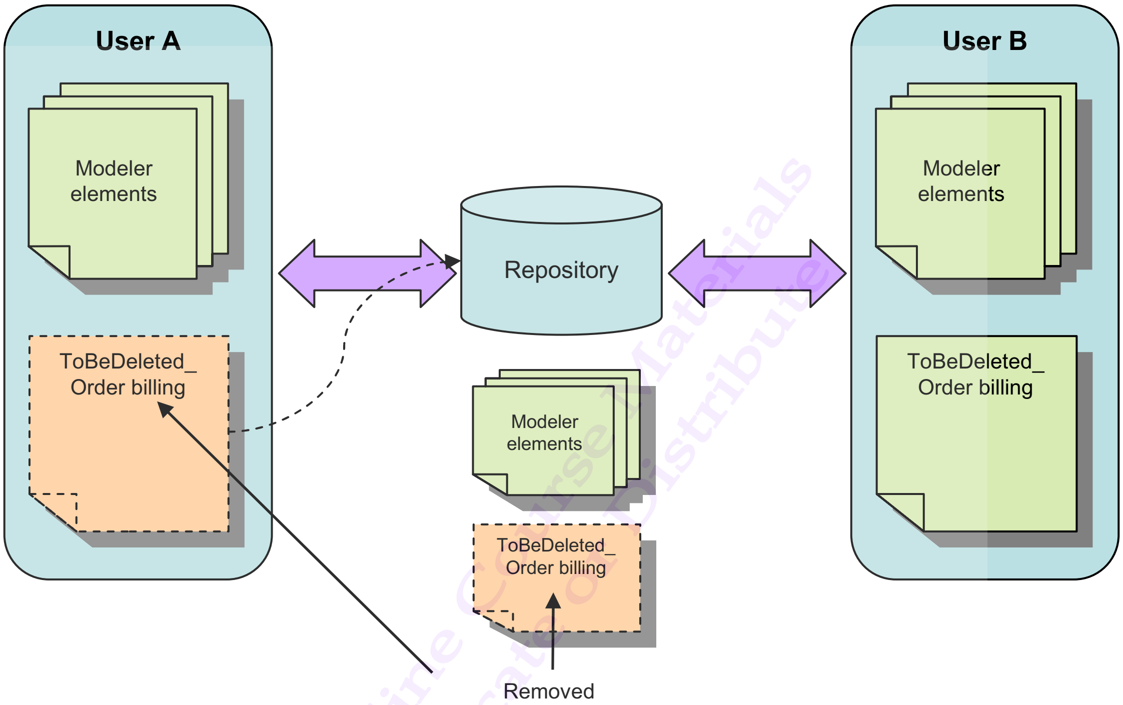
User A
Modeler elements
ToBeDeleted_ Order billing
Repository
Modeler elements
ToBeDeleted_ Order billing
Removed
User B
Modeler elements
ToBeDeleted_ Order billing

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Figure 10-38. Mark element for removal (6 of 8) VB1841.0

Notes:

Mark element for removal (7 of 8)

Everyone deletes from their model; if not, the version control system will show it needs to be committed.

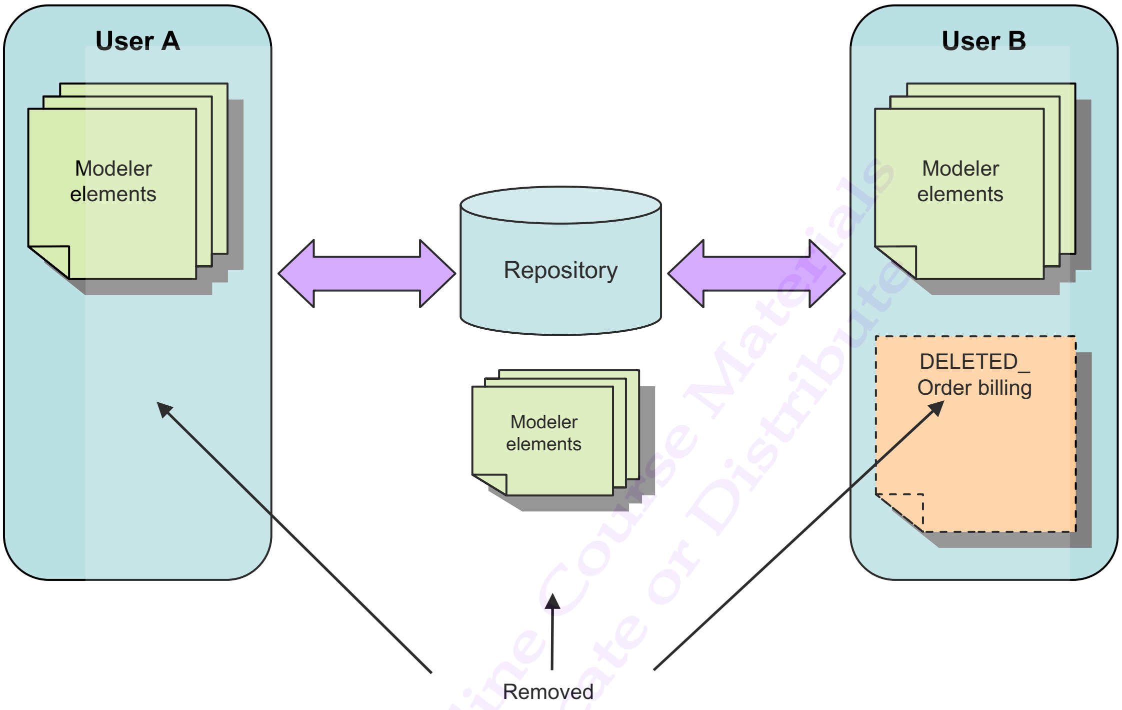


Figure 10-39. Mark element for removal (7 of 8) VB1841.0

Notes:

Mark element for removal (8 of 8)

Once deleted on all workstations and repository, everything will be synchronized.

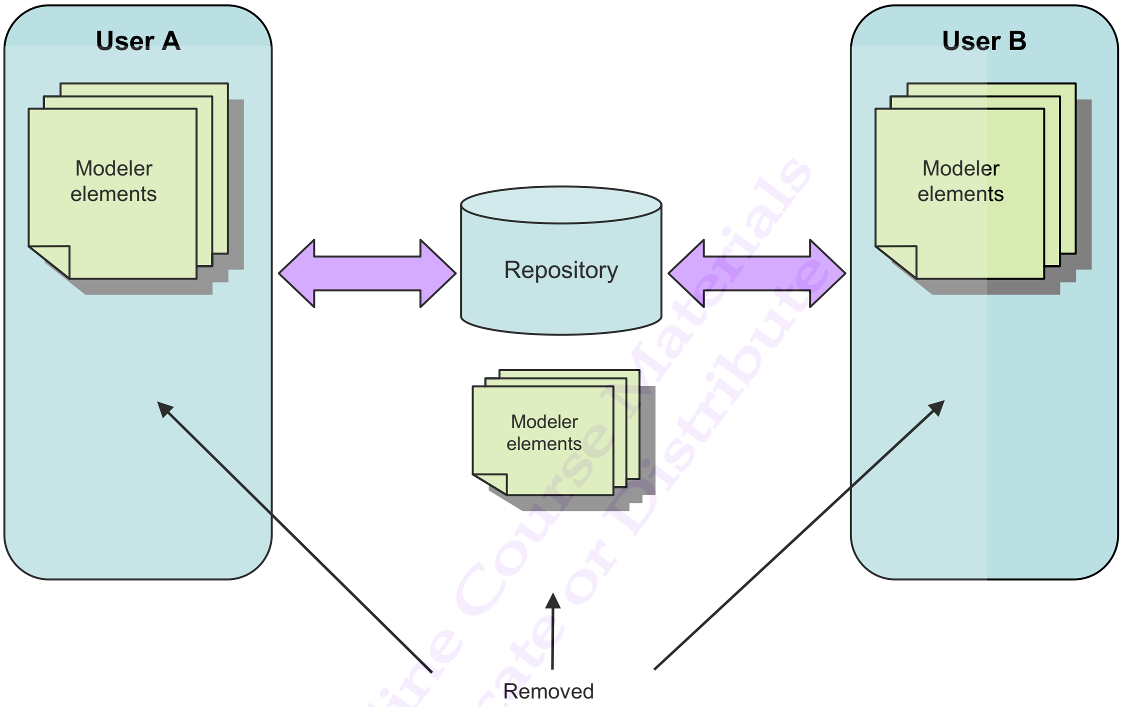


Figure 10-40. Mark element for removal (8 of 8) VB1841.0

Notes:

Broadcasting change

- A simple way to resolve the synchronization of deleted elements is to employ an automated notification scheme whereby members of the team are notified of element deletions, such as with ClearCase.
  - Similar to Strategy I, but the version control system will issue the notice

Figure 10-41. Broadcasting change VB1841.0

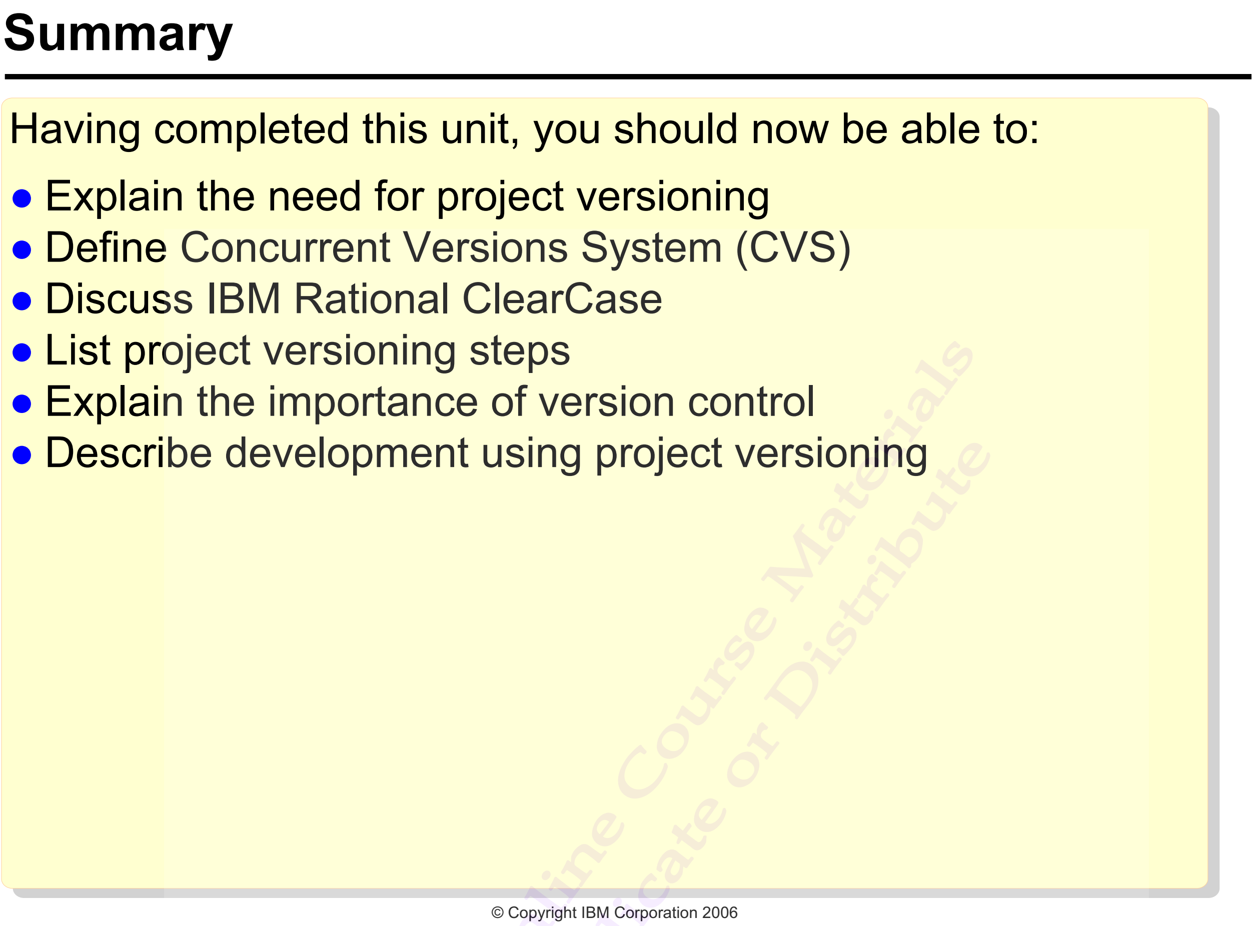
Notes:

Import and export

- Alternatively, users in a team environment might make use of the import-export facilities to achieve the required team support functionality, employing a well-defined process for sharing and merging updates.
  - Everyone creates a new workspace and reimports the latest version with all the latest changes and deletions.

Figure 10-42. Import and export VB1841.0

Notes:



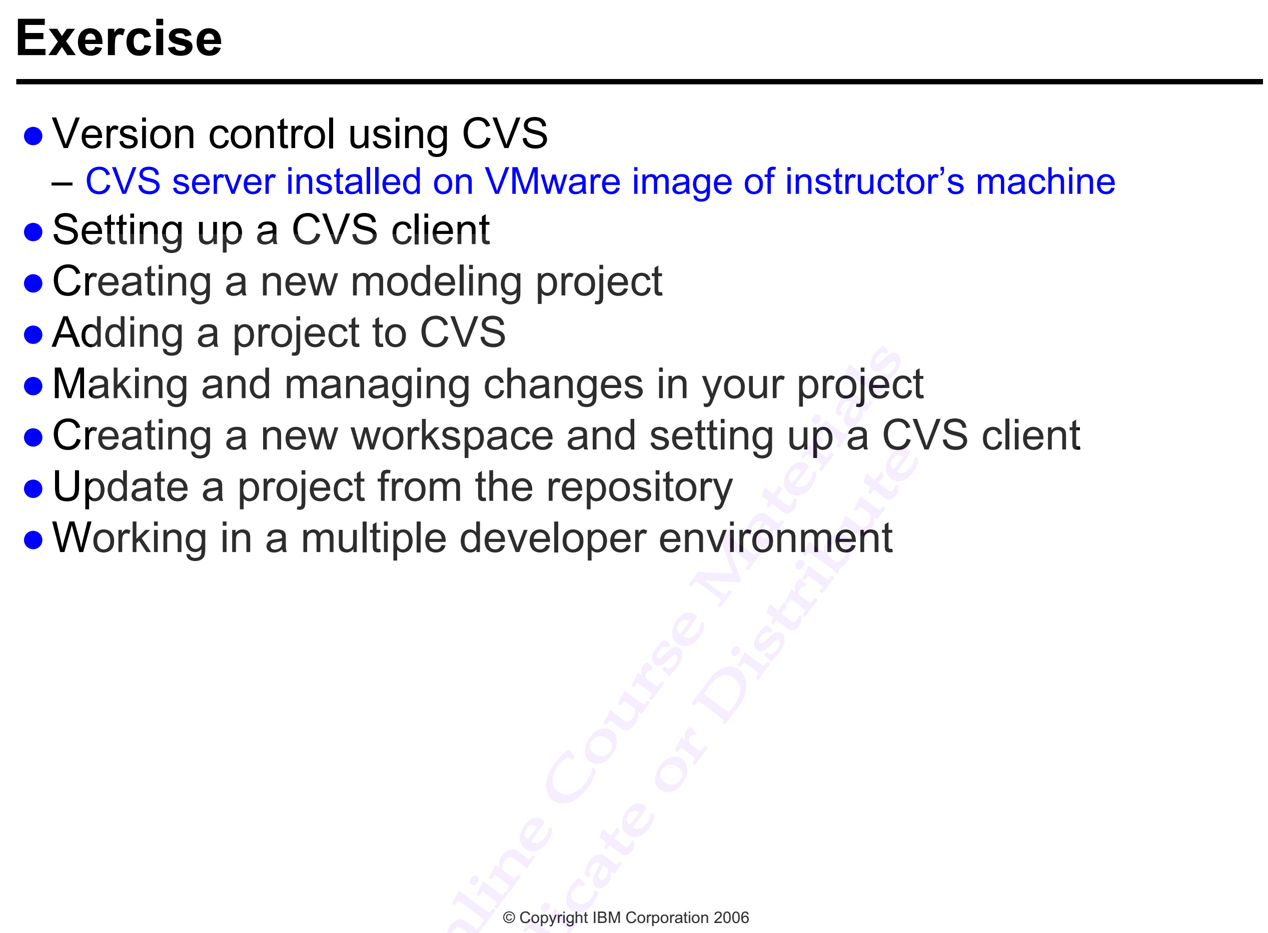
Summary

Having completed this unit, you should now be able to:

- Explain the need for project versioning
- Define Concurrent Versions System (CVS)
- Discuss IBM Rational ClearCase
- List project versioning steps
- Explain the importance of version control
- Describe development using project versioning

Figure 10-43. Summary VB1841.0

Notes:

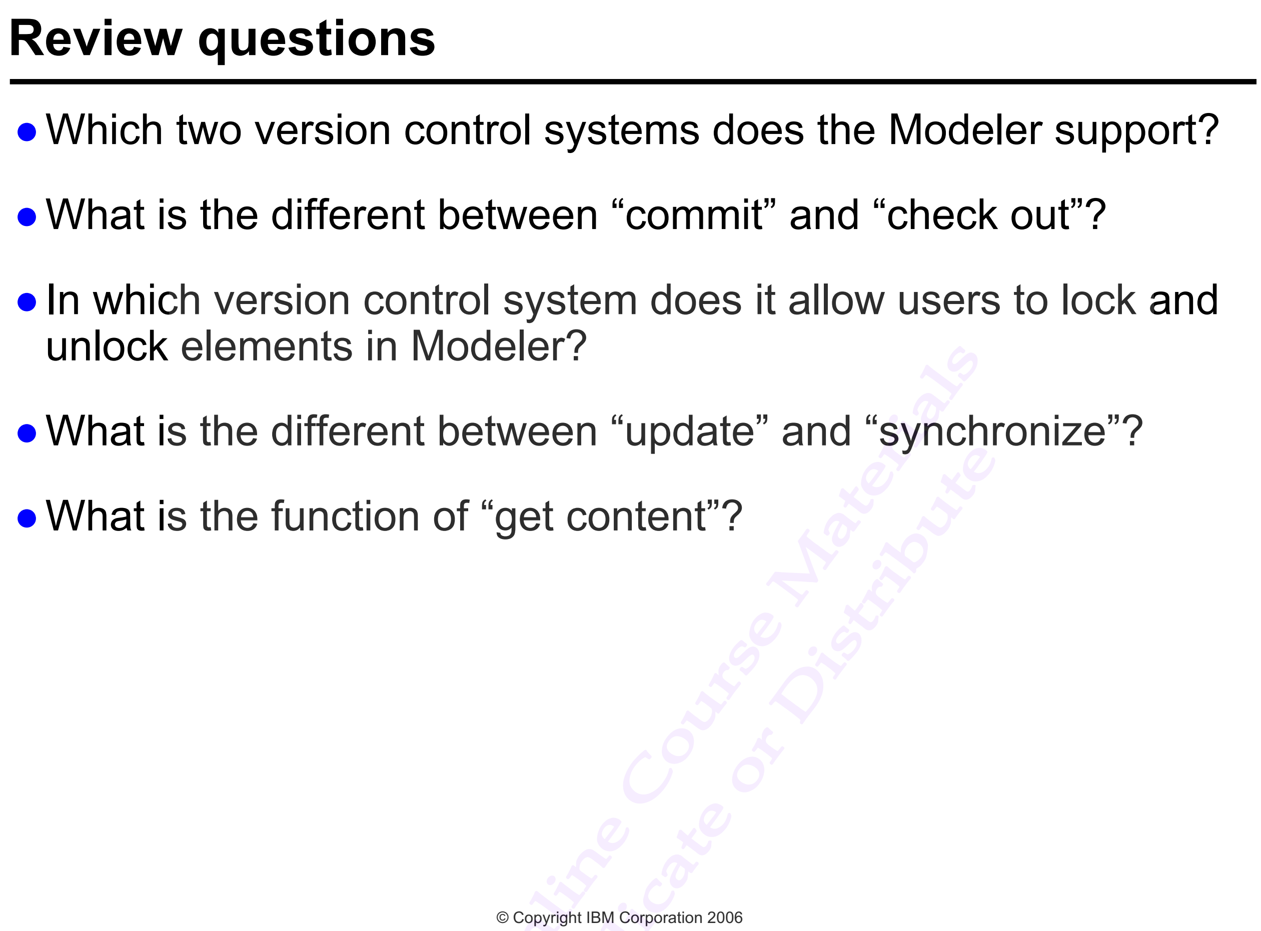


Exercise

- Version control using CVS
  - CVS server installed on VMware image of instructor’s machine
- Setting up a CVS client
- Creating a new modeling project
- Adding a project to CVS
- Making and managing changes in your project
- Creating a new workspace and setting up a CVS client
- Update a project from the repository
- Working in a multiple developer environment

Figure 10-44. Exercise VB1841.0

Notes:



Review questions

- Which two version control systems does the Modeler support?
- What is the different between "commit" and "check out"?
- In which version control system does it allow users to lock and unlock elements in Modeler?
- What is the different between "update" and "synchronize"?
- What is the function of "get content"?

Figure 10-45. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 11. Collaboration using Publishing Server

What this unit is about

This unit describes the collaboration using Publishing Server.

What you should be able to do

After completing this unit, you should be able to:

- Explain the purpose of WebSphere Business Modeler Publishing Server
- Navigate client services and the Web-based services
- Model, integrate, and publish
- Navigate to various portlets

Objectives

After completing this unit, you should be able to:

- Explain the purpose of WebSphere Business Modeler Publishing Server
- Navigate client services and the Web-based services
- Model, integrate, and publish
- Navigate to various portlets

Figure 11-1. Objectives VB1841.0

Notes:

Collaborating using Publishing Server

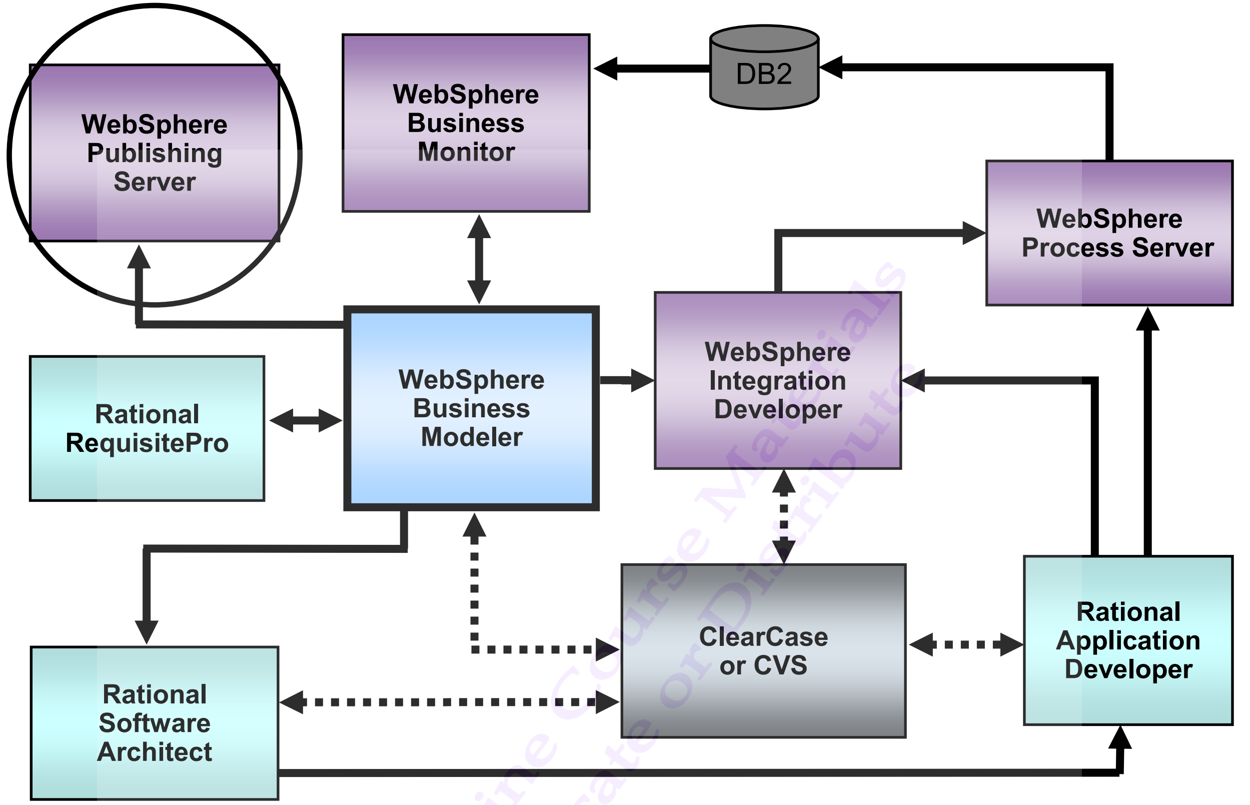
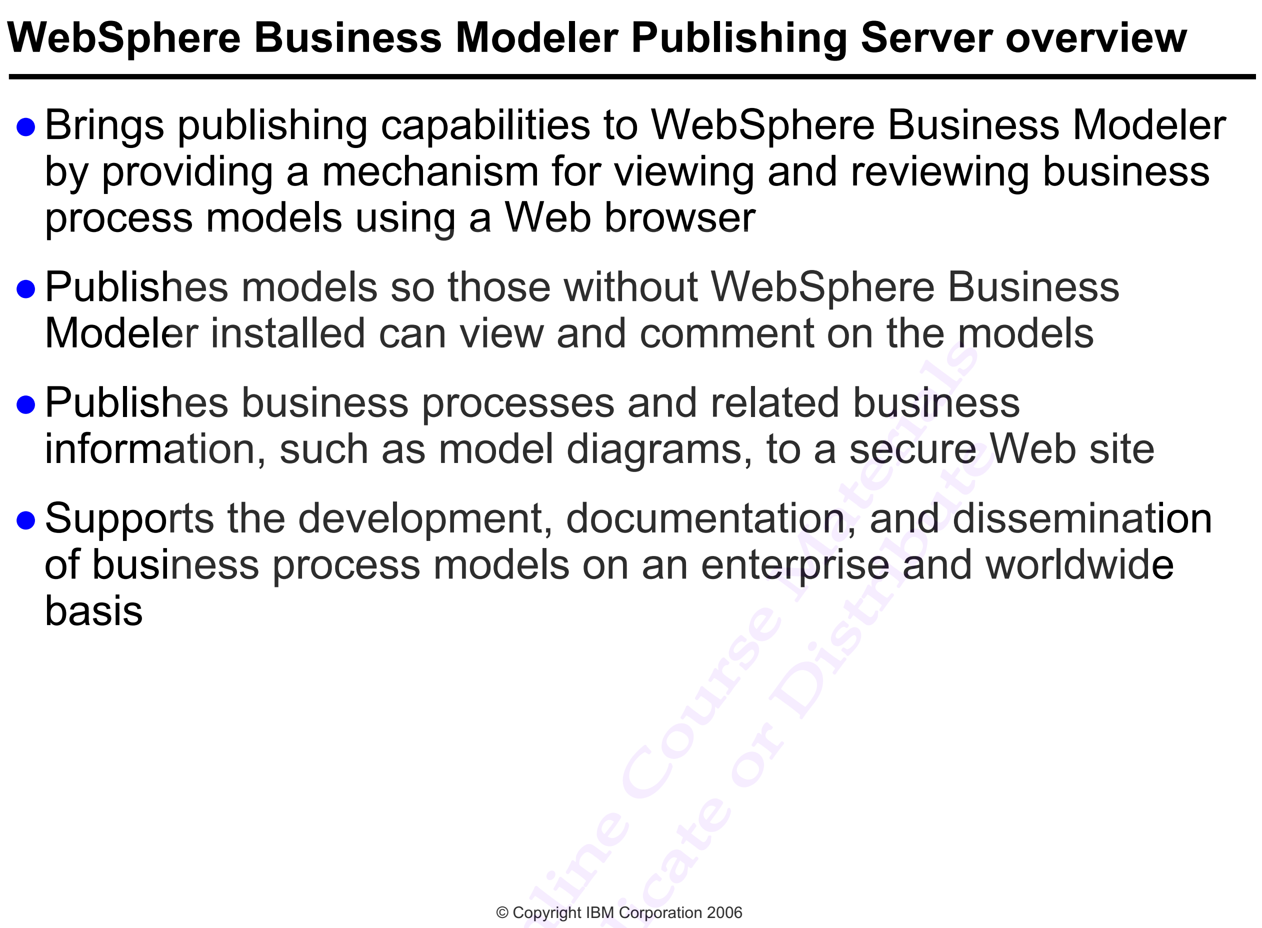

WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
Rational RequisitePro
WebSphere Business Modeler
WebSphere Integration Developer
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 11-2. Collaboration using Publishing Server VB1841.0

Notes:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)



WebSphere Business Modeler Publishing Server overview

- Brings publishing capabilities to WebSphere Business Modeler by providing a mechanism for viewing and reviewing business process models using a Web browser
- Publishes models so those without WebSphere Business Modeler installed can view and comment on the models
- Publishes business processes and related business information, such as model diagrams, to a secure Web site
- Supports the development, documentation, and dissemination of business process models on an enterprise and worldwide basis

Figure 11-3. WebSphere Business Modeler Publishing Server overview VB1841.0

Notes:

Provide a way of gathering information and validating the business process models and then distributing for reviews.

- Accurate process models:
  - A tool to view visual representations of business processes and supporting information.
  - The more accurate and detailed the modeled business processes are, the more accurate the results of the analysis performed on the model.
  - A more accurate model can forecast the effects of changing the business processes.
- Viewable business processes:
  - Publishing Server can publish the business process model to make it more widely available within an organization.

- Any authorized person in the organization can then view the process using a standard Web browser.

Benefits of Publishing Server

- An important step in modeling the business processes is to validate the model’s data.
- The primary vehicle for validating published business processes is the comment.
- The published business processes may also have attachments.
- The published business process can also serve as a training tool.

Figure 11-4. Benefits of Publishing Server VB1841.0

Notes:

Technical overview

- Users may include business analysts, consultants, or process engineers.
- Reviewers may include executives, consultants, employees, partners, and even customers.
- Reviewers validate the data used to create the process model or provide feedback.
- Users make adjustments to the process based on reviewer feedback.
- Publish a single model element, a complete catalog, or the entire process model project.
- The reviewers can then comment on the updated process model or respond to comments.
- This creates an environment for continuous improvement of the process model.

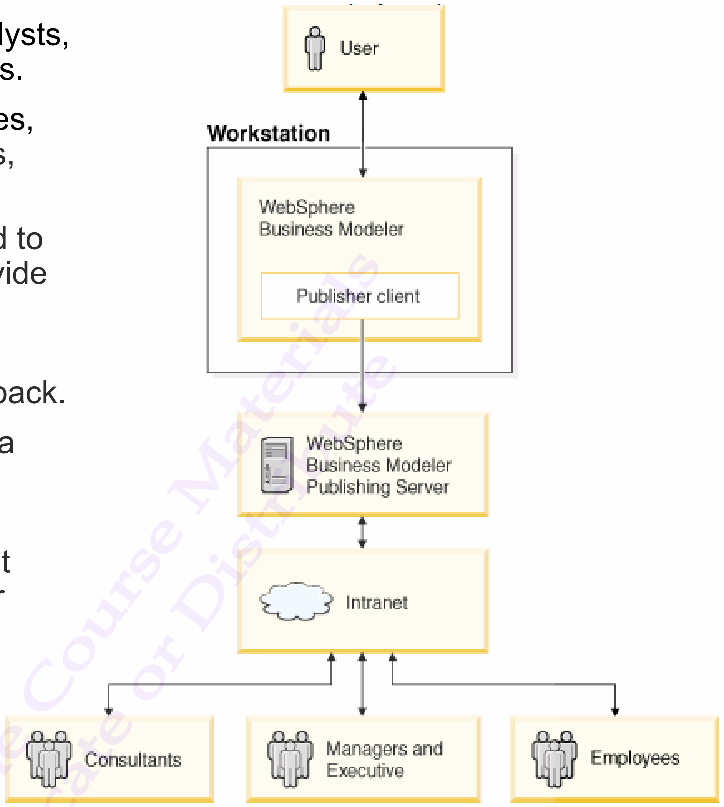
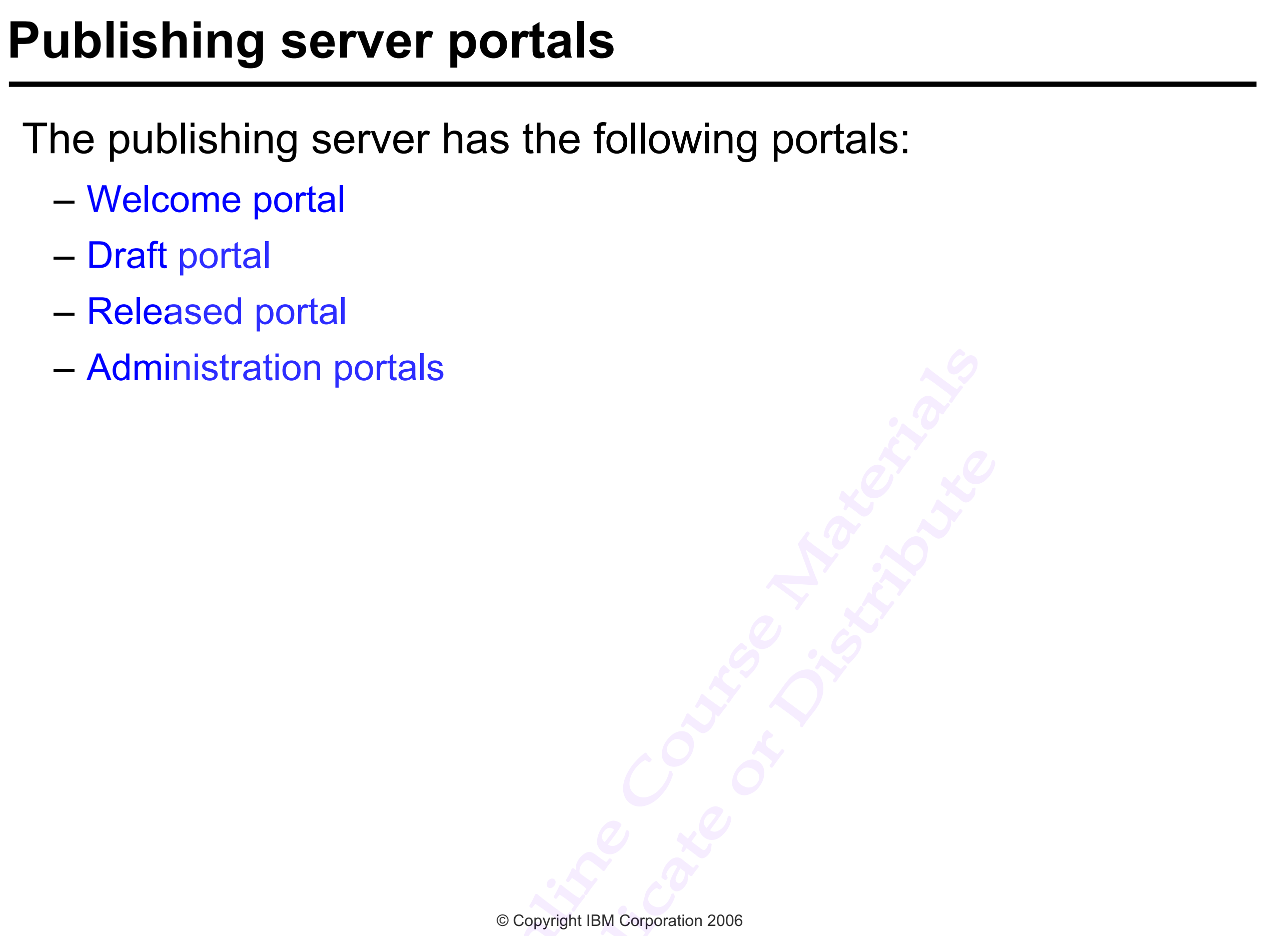


Figure 11-5. Technical overview VB1841.0

Notes:



Publishing server portals

The publishing server has the following portals:

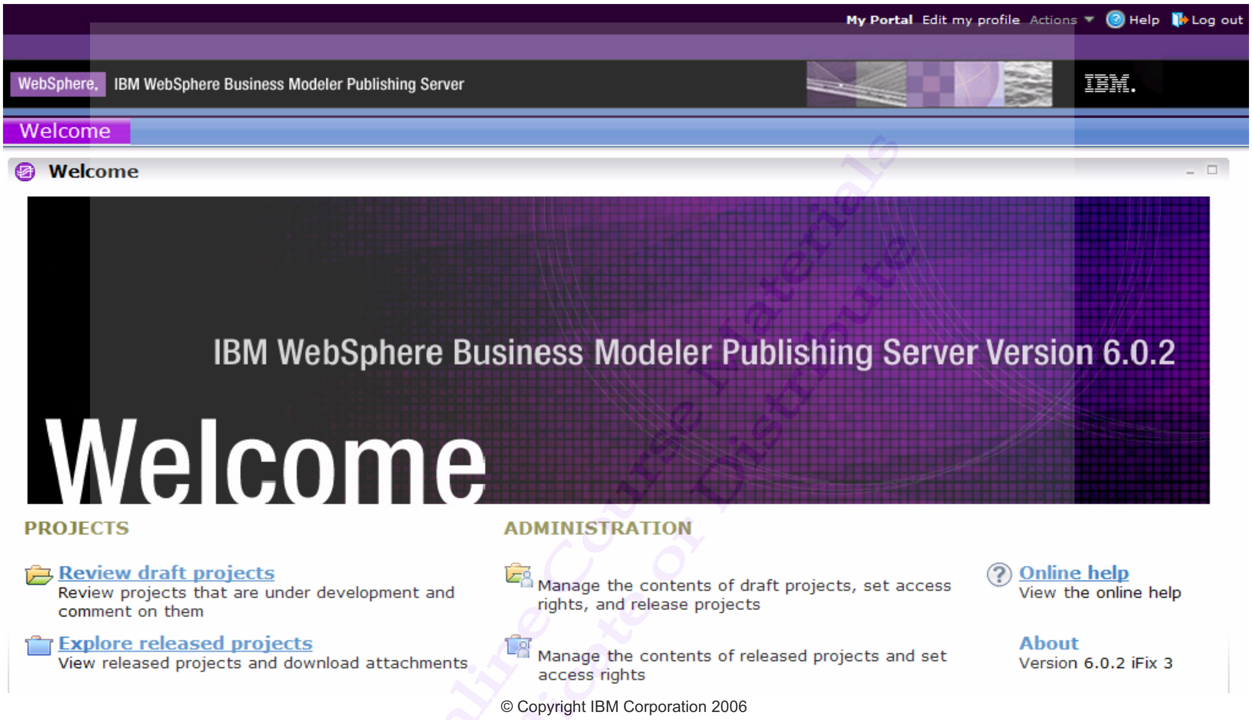
- Welcome portal
- Draft portal
- Released portal
- Administration portals

Figure 11-6. Publishing server portals VB1841.0

Notes:

Welcome portal

- Serves as the gateway to the Draft and Released portals and to their administration portals
- Contains a single portlet which has links to Review draft projects, Administer draft projects, Explore released projects, Administer released projects, and Online help


My Portal
Edit my profile
Actions
Help
Log out
WebSphere.
IBM WebSphere Business Modeler Publishing Server
IBM.
Welcome
Welcome
IBM WebSphere Business Modeler Publishing Server Version 6.0.2
Welcome

PROJECTS

Review draft projects
Review projects that are under development and comment on them

Explore released projects
View released projects and download attachments

ADMINISTRATION

Manage the contents of draft projects, set access rights, and release projects

Manage the contents of released projects and set access rights

Online help
View the online help

About
Version 6.0.2 iFix 3

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Figure 11-7. Welcome portal VB1841.0

Notes:

Draft and Released portals

- Draft portal displays projects that are actively being developed by a modeling team or are being commented on by reviewers.
- The modeling team uses the Draft portal to gather and exchange information about model elements in the project and to gain consensus about what the models should look like and what the project should contain.
- The Released portal displays projects that are ready to be used as a reference.
- When an administrator releases a project, the Released portal receives a copy of the draft project.
- It contains only the elements and attachments that were in the draft project when it was released.
- The purpose of the Released portal is to allow viewers to see processes and their related information.

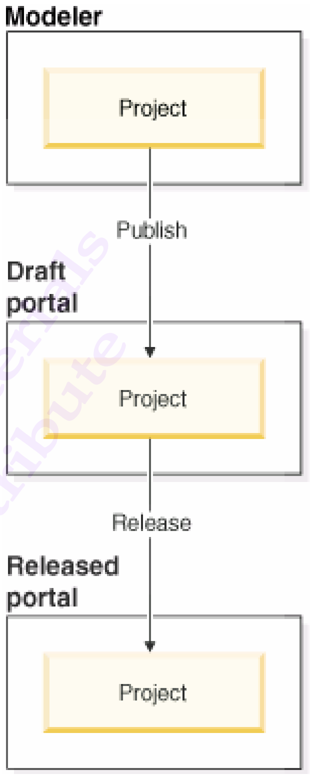


Figure 11-8. Draft and Released portals VB1841.0

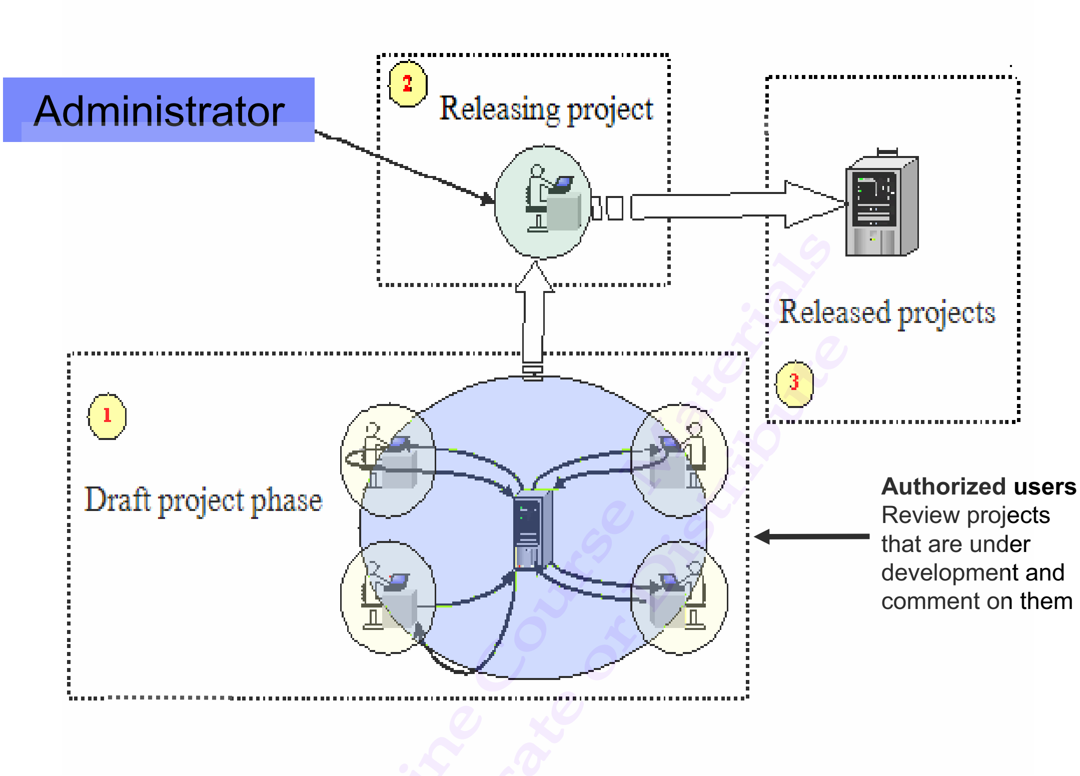
Notes:

With this arrangement, a version of the project can exist in WebSphere Business Modeler, in the Draft portal and in the Released portal. When the modeling team is ready to have a project reviewed, the team publishes it to the Draft portal.

The modeling team can continue to work on the version in WebSphere Business Modeler without affecting the version in the Draft portal. One of the activities that the modeling team should do is to look at the comments made by reviewers on the Draft portal version and make appropriate changes to the version in WebSphere Business Modeler. Eventually, the modeling team will want to show the reviewers the updated version of the project, including the changes they made due to the comments. To provide the updated version, the modeling team republishes the project, which refreshes the version on the Draft portal.

At any time, an administrator can release a copy of the Draft portal version to the Released portal. Reviewers can continue to comment on the Draft portal version without affecting the content of the Released portal. Typically, a project in the Draft portal undergoes several publishing refreshes before the administrator releases it. The administrator can re-release a project and then refresh the version in the Released portal.

From draft to released project



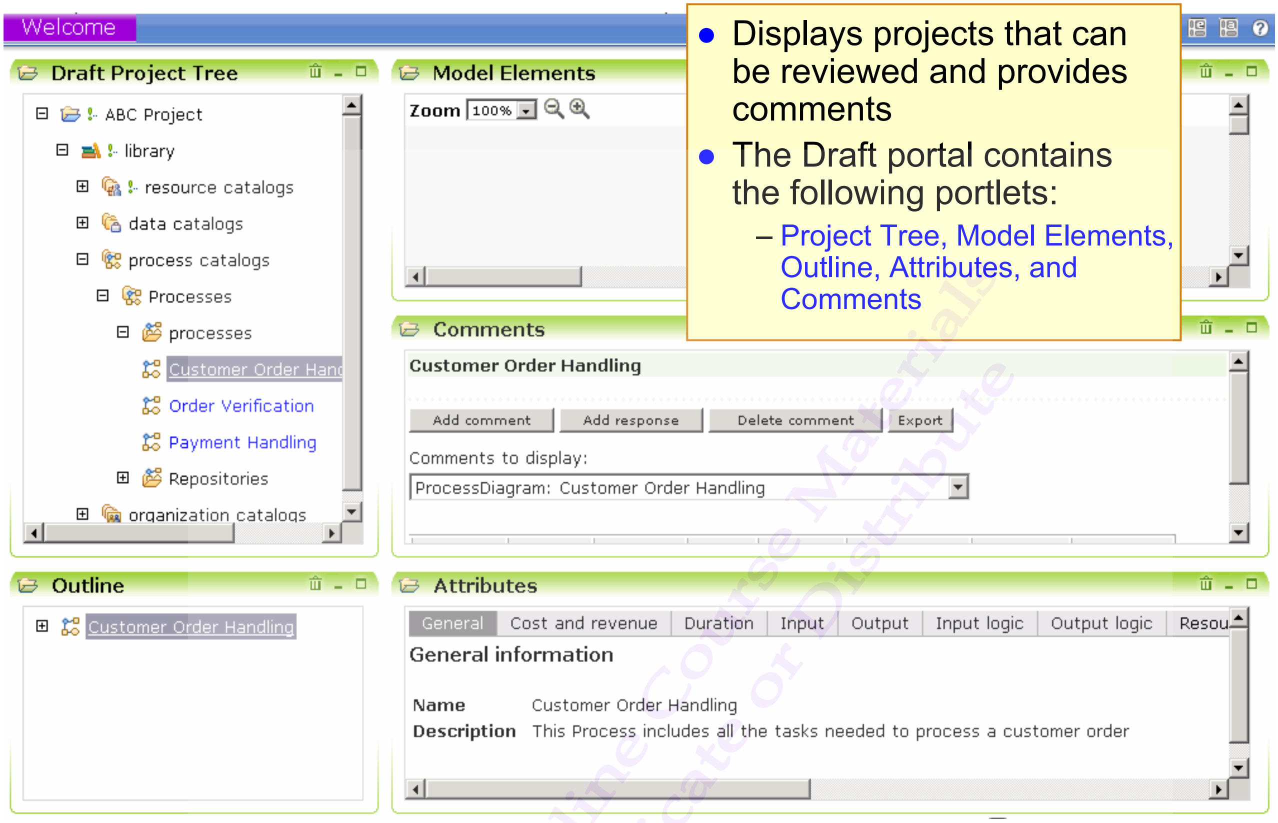
Authorized users
Review projects that are under development and comment on them

Figure 11-9. From draft to released project

VB1841.0

Notes:

Draft portal



Zoom 100%

Customer Order Handling

Comments to display: ProcessDiagram: Customer Order Handling

General information

Name Customer Order Handling

Description This Process includes all the tasks needed to process a customer order

- Displays projects that can be reviewed and provides comments
- The Draft portal contains the following portlets:
  - Project Tree, Model Elements, Outline, Attributes, and Comments

Figure 11-10. Draft portal VB1841.0

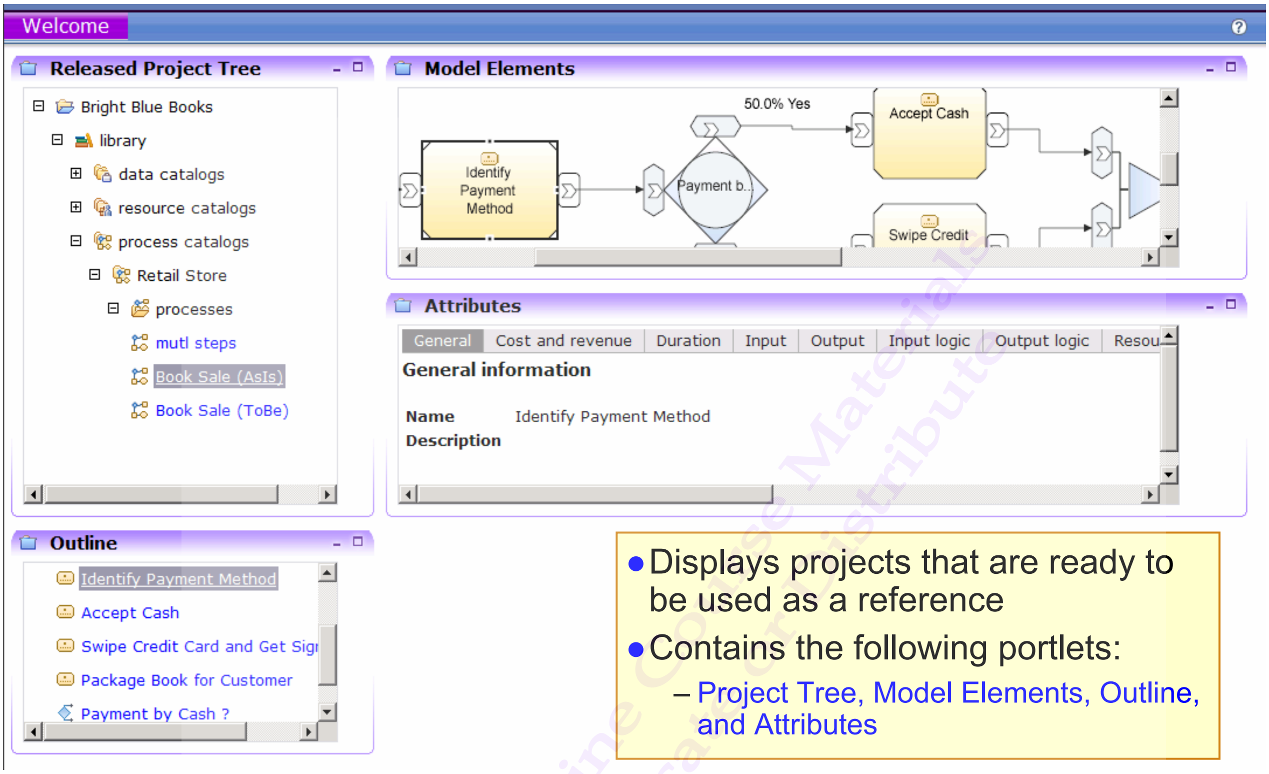
Notes:

The Draft portal contains the following portlets:

- The **Project Tree** displays all of the project elements in a project. This view shows the organization of the project and allows you to select the model element for which you want to make a comment. To keep the organization compact enough to view easily, the Project Tree uses a tree format with expandable and collapsible nodes. If an element has the attachment icon, the element or one or more of its children nodes have at least one attachment. Similarly, if an element has the comment icon, the element or one or more of its children nodes have at least one comment.
- The **Model Elements** portlet displays a process diagram if the element selected in the Project Tree is a process or an organization chart. Otherwise, this portlet displays the attributes of the model element and other element information such as rules.
- The **Outline** portlet displays all of the elements in a process diagram if the element selected in the Project Tree is a process. Viewers can select an element without having to scroll the diagram.

- The **Attributes** portlet displays the attributes of the selected element in the Model Elements portlet or the attributes of the selected element in the Project Tree.
- The **Comments** portlet displays all of the comments associated with the model element. If you have sufficient authority, you can comment on the model element and add a response to a comment. This is the portlet that does not have a corresponding pane in WebSphere Business Modeler.

Released portal



General information

Name Identify Payment Method
Description

- Displays projects that are ready to be used as a reference
- Contains the following portlets:
  - Project Tree, Model Elements, Outline, and Attributes

Figure 11-11. Released portal VB1841.0

Notes:

The Released portal contains the following portlets:

- The **Project Tree** displays all of the project elements in a project. This view shows the organization of the project and allows you to select the model element for which you want to make a comment. To keep the organization compact enough to view easily, the Project Tree uses a tree format with expandable and collapsible nodes.
- The **Model Elements** portlet displays a process diagram if the element selected in the Project Tree is a process or an organization chart. Otherwise, this portlet displays the attributes of the model element and other element information such as rules.
- The **Outline** portlet displays all of the elements in a process diagram if the element selected in the Project Tree is a process. Viewers can select an element without having to scroll the diagram.
- The **Attributes** portlet displays the attributes of the selected element in the Model Elements portlet or the attributes of the selected element in the Project Tree.

For any portlet, you can maximize it so that it occupies the entire portal. You can restore a maximized portlet to its original default size.

Modeling, integrating, and publishing

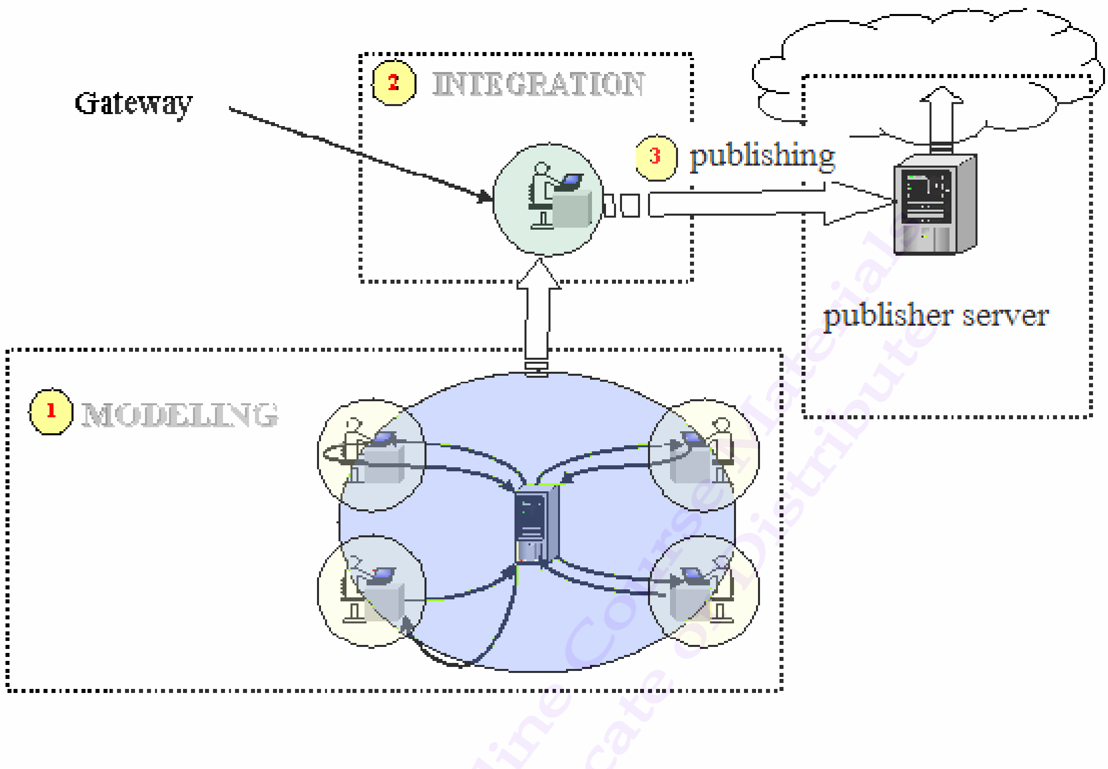


Figure 11-12. Modeling, integrating, and publishing VB1841.0

Notes:

Modeling: A team of modelers combine to create a model.

Integrating: An individual builds a consistent model from the contents provided by the modeling team.

Publishing: The publisher sends the consistent model to the publishing server.

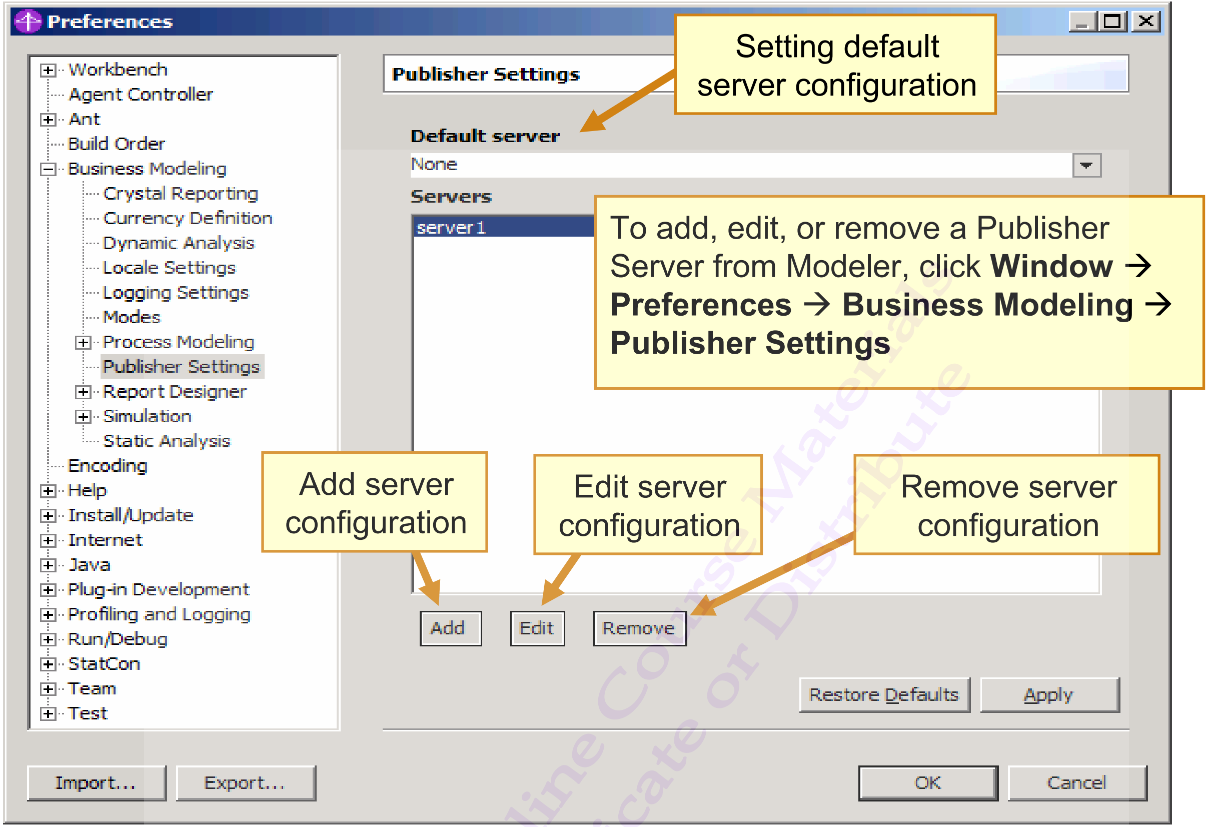
Publishing a project

- Connecting to a publishing server
  - A Web browser is used to view and comment on published project elements.
    - Such as processes, business items, and resources
- Setting the default publishing server
  - Set a default publishing server to host published projects.
- Edit the connection to a publishing server
  - To change the information used to connect to the server
    - For example, update password or change user information.
- Removing a connection from a publishing server
  - To remove obsolete or unavailable servers from the list of available servers.
  - Once a publishing server connection is removed, user cannot publish a project to it.
- Sending a project to the server
  - Publishing a project, or selected elements in the project, sends a new copy of the project to the publishing server.

Figure 11-13. Publishing a project VB1841.0

Notes:

Client services: Client publisher



Publisher Settings

Default server
None

Servers
server1

Setting default server configuration

To add, edit, or remove a Publisher Server from Modeler, click **Window → Preferences → Business Modeling → Publisher Settings**

Add server configuration

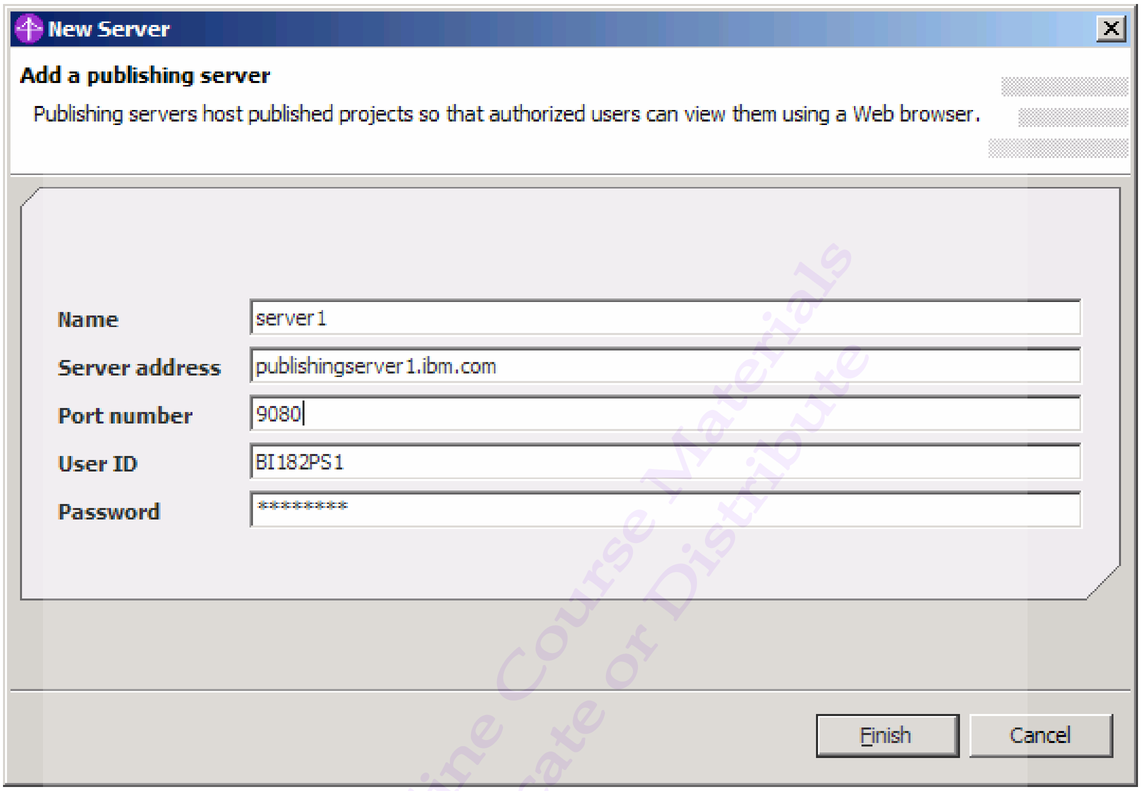
Edit server configuration

Remove server configuration

Figure 11-14. Client services: Client publisher VB1841.0

Notes:

Add a publishing server



Add a publishing server

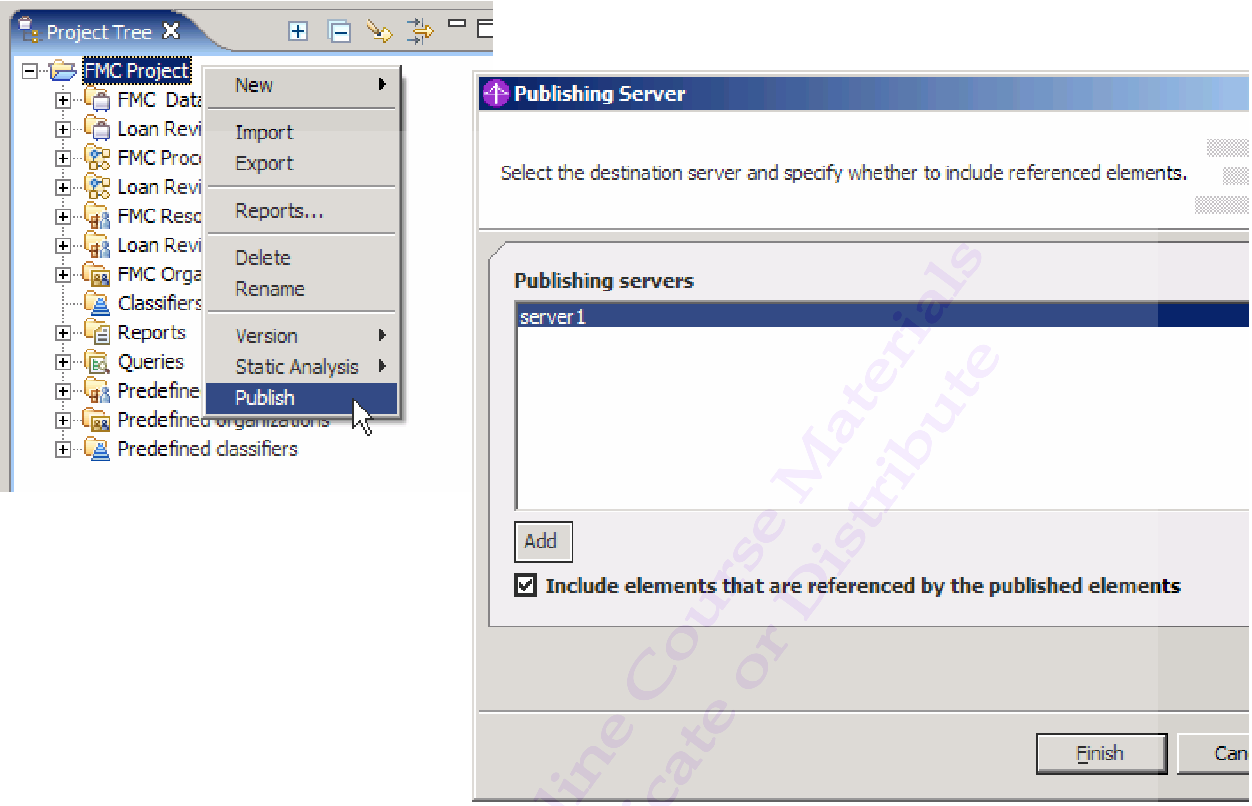
Publishing servers host published projects so that authorized users can view them using a Web browser.

Name server1
Server address publishingserver1.ibm.com
Port number 9080
User ID BI182PS1
Password *********

Figure 11-15. Add a publishing server VB1841.0

Notes:

Publish a project with references



Select the destination server and specify whether to include referenced elements.

☑ Include elements that are referenced by the published elements

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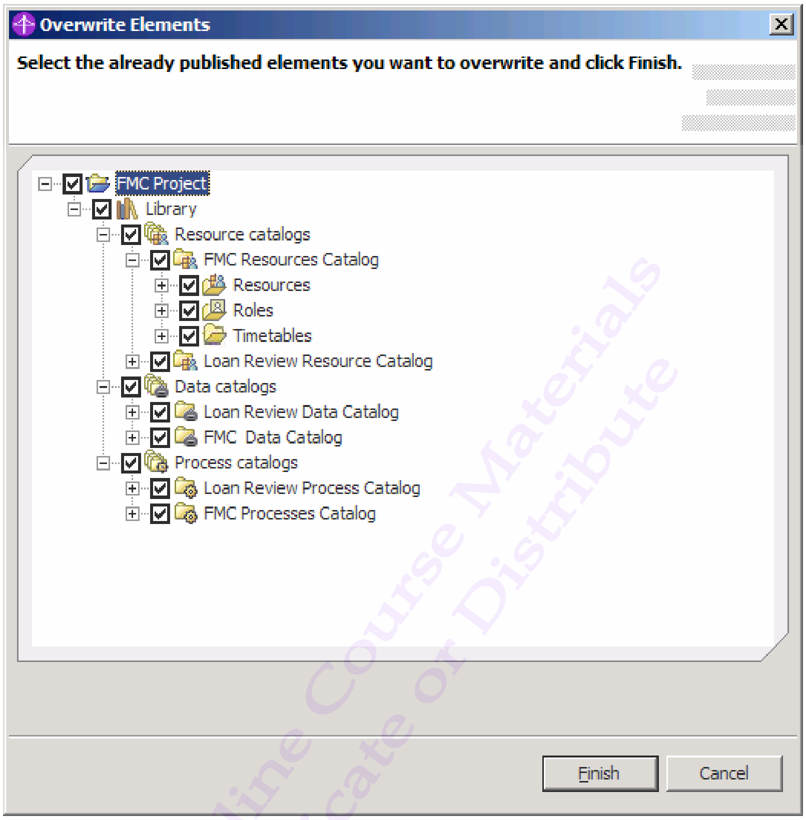
Figure 11-16. Publish a project with references VB1841.0

Notes:

If you are publishing one or more elements from a project but not the complete project, you can set whether to include other elements that your selected elements reference. To do this, select the **Include elements that are referenced by the published elements** check box. Typically, you would clear this check box if you are updating specific elements on the server and you do not want to update the referenced elements.

Override elements confirmation



Select the already published elements you want to overwrite and click Finish.

- ☑ FMC Project
  - ☑ Library
    - ☑ Resource catalogs
      - ☑ FMC Resources Catalog
        - ☑ Resources
        - ☑ Roles
        - ☑ Timetables
      - ☑ Loan Review Resource Catalog
    - ☑ Data catalogs
      - ☑ Loan Review Data Catalog
      - ☑ FMC Data Catalog
    - ☑ Process catalogs
      - ☑ Loan Review Process Catalog
      - ☑ FMC Processes Catalog

Figure 11-17. Override elements confirmation VB1841.0

Notes:

If the Overwrite Elements wizard opens, select which elements you want to overwrite and then click **Finish.** For each element that you selected, the existing version on the server is overwritten by the version you are publishing.

Main page: Project Tree

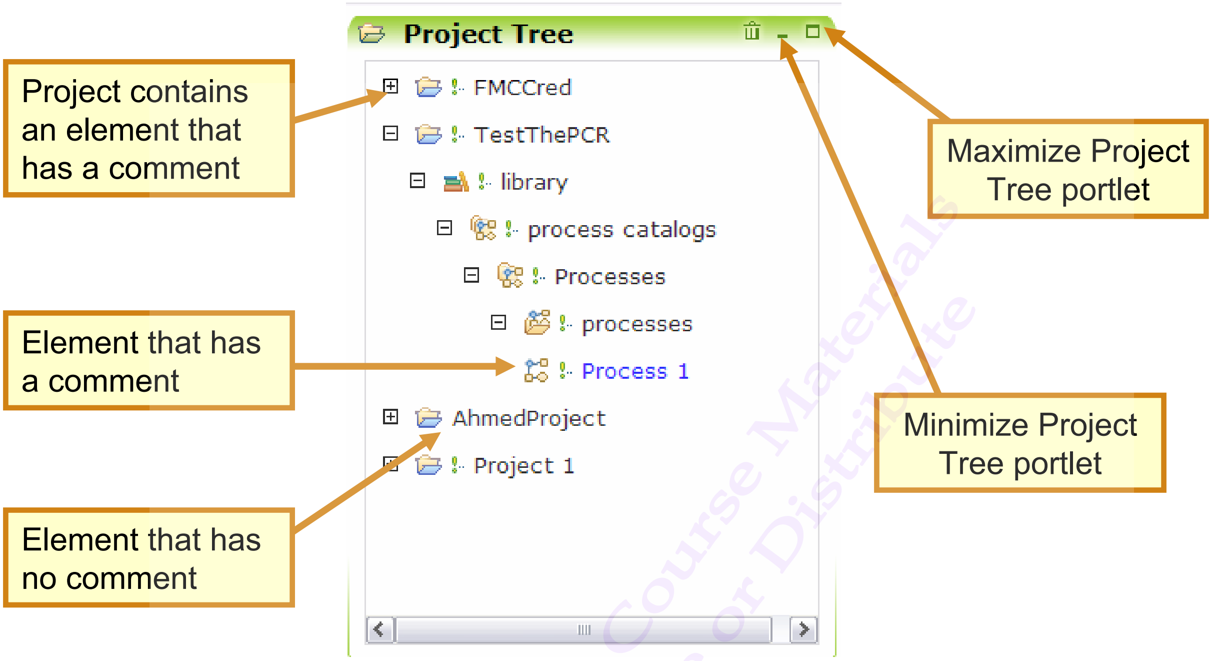

Project Tree
FMCCred
TestThePCR
library
process catalogs
Processes
processes
Process 1
AhmedProject
Project 1
Project contains an element that has a comment
Element that has a comment
Element that has no comment
Maximize Project Tree portlet
Minimize Project Tree portlet

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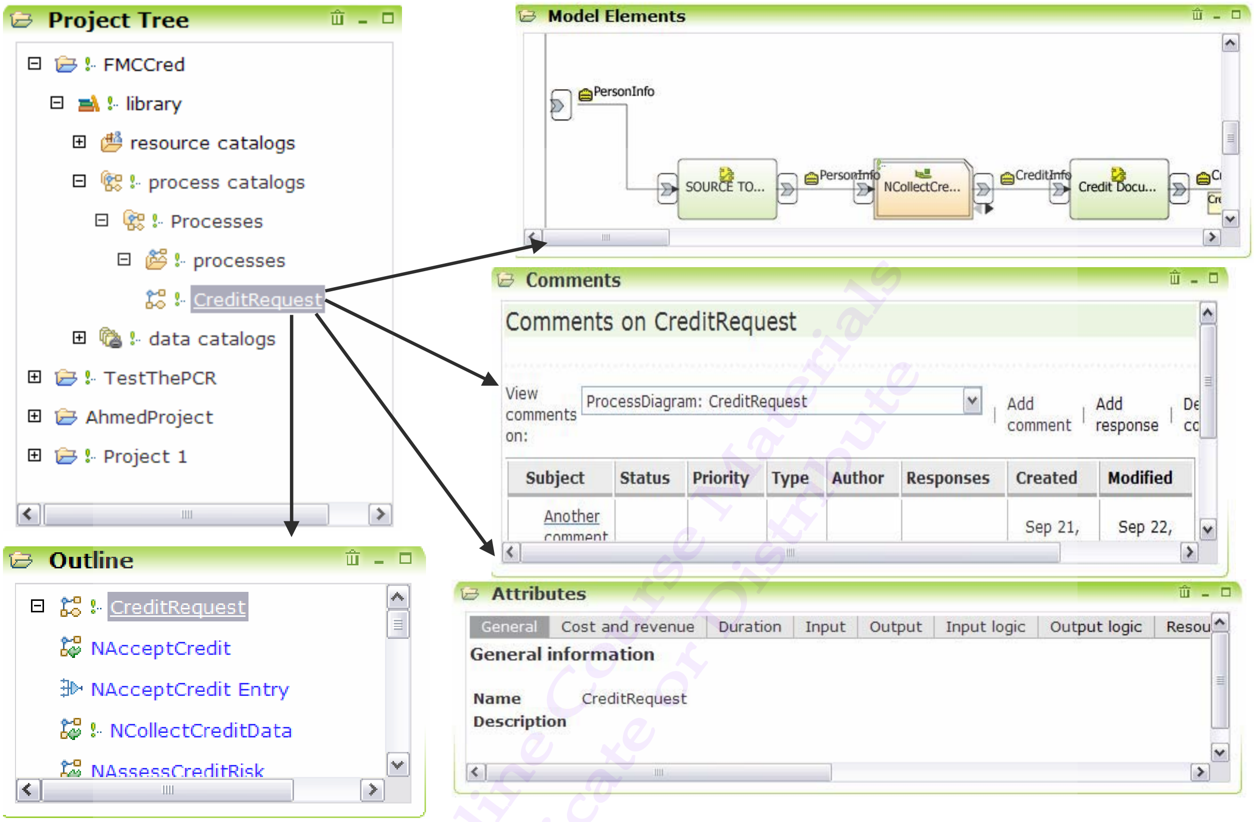
Figure 11-18. Main page: Project Tree

VB1841.0

Notes:

Main page: Navigate to different panes



Comments on CreditRequest

View comments on: ProcessDiagram: CreditRequest

Subject	Status	Priority	Type	Author	Responses	Created	Modified
Another comment						Sep 21,	Sep 22,

General information

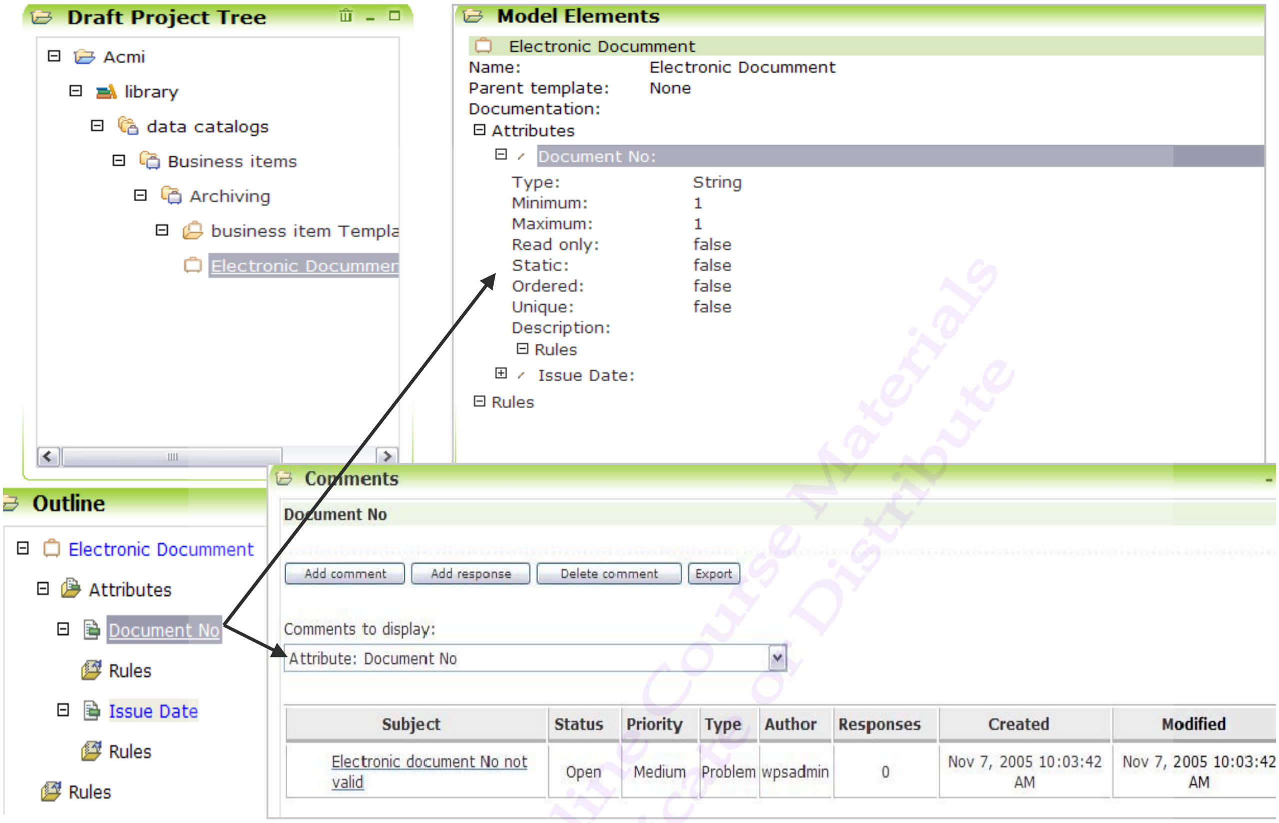
Name CreditRequest
Description

© Copyright IBM Corporation 2006

Figure 11-19. Main page: Navigate to different panes VB1841.0

Notes:

Outline view



Draft Project Tree

- Acmi
  - library
    - data catalogs
      - Business items
        - Archiving
          - business item Templa
            - Electronic Docummen

Model Elements

Electronic Docummment

Name: Electronic Docummment
Parent template: None
Documentation:
Attributes
Document No:
Type: String
Minimum: 1
Maximum: 1
Read only: false
Static: false
Ordered: false
Unique: false
Description:
Rules
Issue Date:
Rules

Outline

- Electronic Document
  - Attributes
    - Document No
      - Rules
    - Issue Date
      - Rules
  - Rules

Comments

Document No

Comments to display: Attribute: Document No

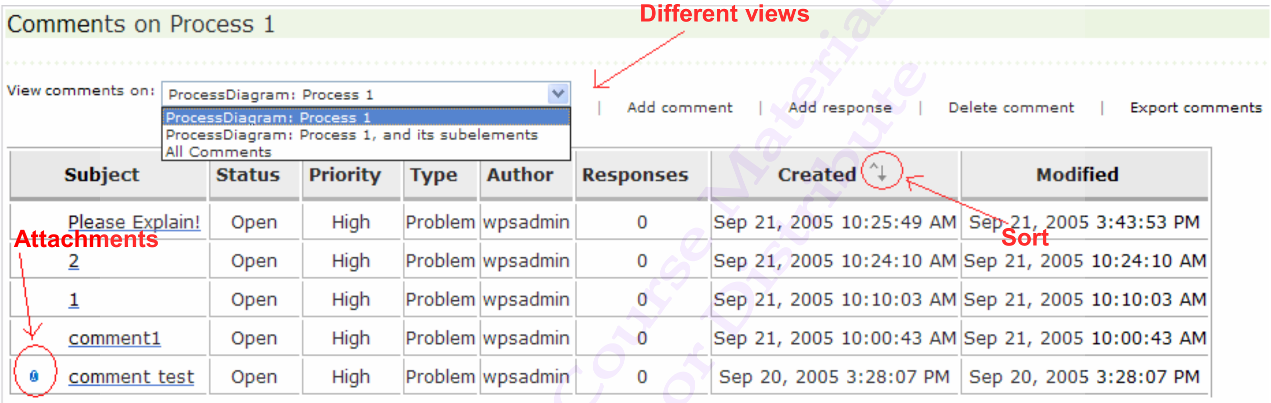
Subject	Status	Priority	Type	Author	Responses	Created	Modified
Electronic document No not valid	Open	Medium	Problem	wpsadmin	0	Nov 7, 2005 10:03:42 AM	Nov 7, 2005 10:03:42 AM

Figure 11-20. Outline view VB1841.0

Notes:

Comments view

- From the main Comments view
  - Users can switch between three viewing modes
  - Sort comments according to a specific criteria
  - Directly access attachments on individual comments


Different views
Attachments
Sort
ProcessDiagram: Process 1
ProcessDiagram: Process 1, and its subelements
All Comments
| Add comment | Add response | Delete comment | Export comments

Comments on Process 1

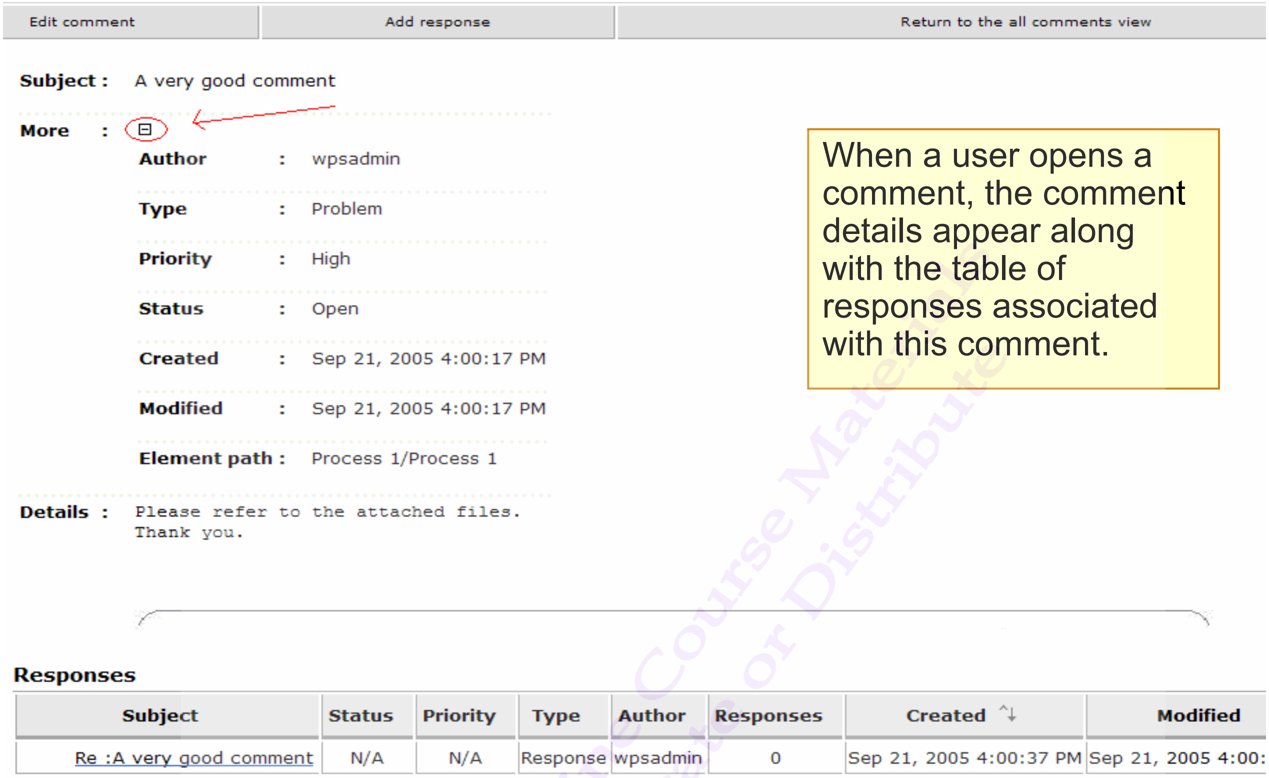
View comments on: ProcessDiagram: Process 1

Subject	Status	Priority	Type	Author	Responses	Created	Modified
Please Explain!	Open	High	Problem	wpsadmin	0	Sep 21, 2005 10:25:49 AM	Sep 21, 2005 3:43:53 PM
2	Open	High	Problem	wpsadmin	0	Sep 21, 2005 10:24:10 AM	Sep 21, 2005 10:24:10 AM
1	Open	High	Problem	wpsadmin	0	Sep 21, 2005 10:10:03 AM	Sep 21, 2005 10:10:03 AM
comment1	Open	High	Problem	wpsadmin	0	Sep 21, 2005 10:00:43 AM	Sep 21, 2005 10:00:43 AM
comment test	Open	High	Problem	wpsadmin	0	Sep 20, 2005 3:28:07 PM	Sep 20, 2005 3:28:07 PM

Figure 11-21. Comment view VB1841.0

Notes:

Opening comments



Subject : A very good comment

More : ⊟

Author	wpsadmin
Type	Problem
Priority	High
Status	Open
Created	Sep 21, 2005 4:00:17 PM
Modified	Sep 21, 2005 4:00:17 PM
Element path	Process 1/Process 1

Details : Please refer to the attached files.
Thank you.

Responses

Subject	Status	Priority	Type	Author	Responses	Created	Modified
Re :A very good comment	N/A	N/A	Response	wpsadmin	0	Sep 21, 2005 4:00:37 PM	Sep 21, 2005 4:00:

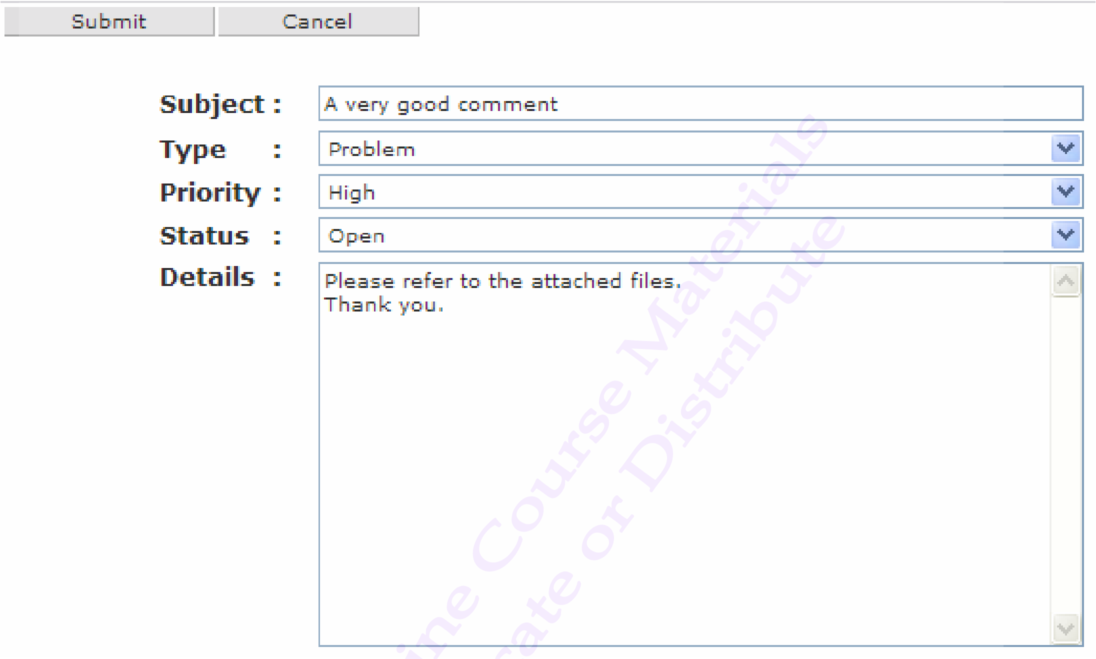
When a user opens a comment, the comment details appear along with the table of responses associated with this comment.

Figure 11-22. Opening comments VB1841.0

Notes:

Adding comments

When adding comments, users specify the comment type, priority, and status in addition to the comment subject and details.

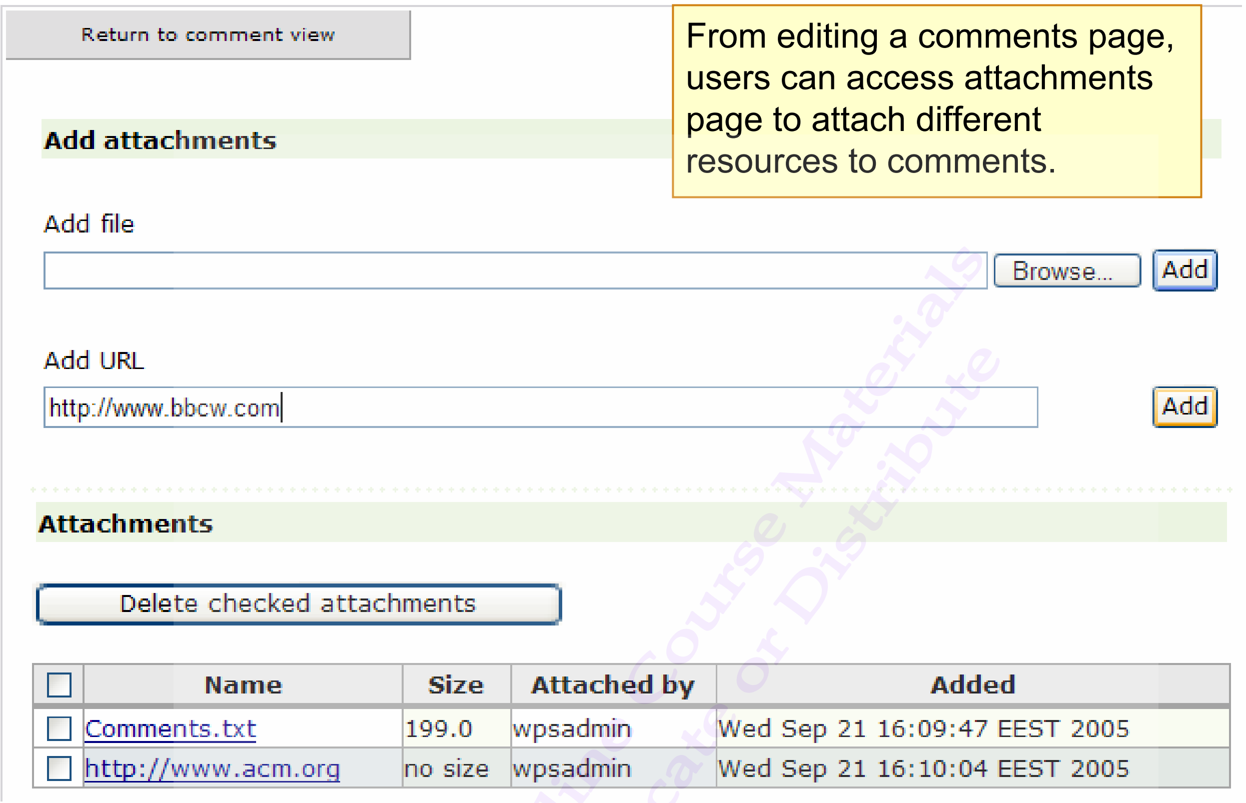


Subject :	A very good comment
Type :	Problem
Priority :	High
Status :	Open
Details :	Please refer to the attached files. Thank you.

Figure 11-23. Adding comments VB1841.0

Notes:

Attachment view



From editing a comments page, users can access attachments page to attach different resources to comments.

Add URL: http://www.bbcw.com

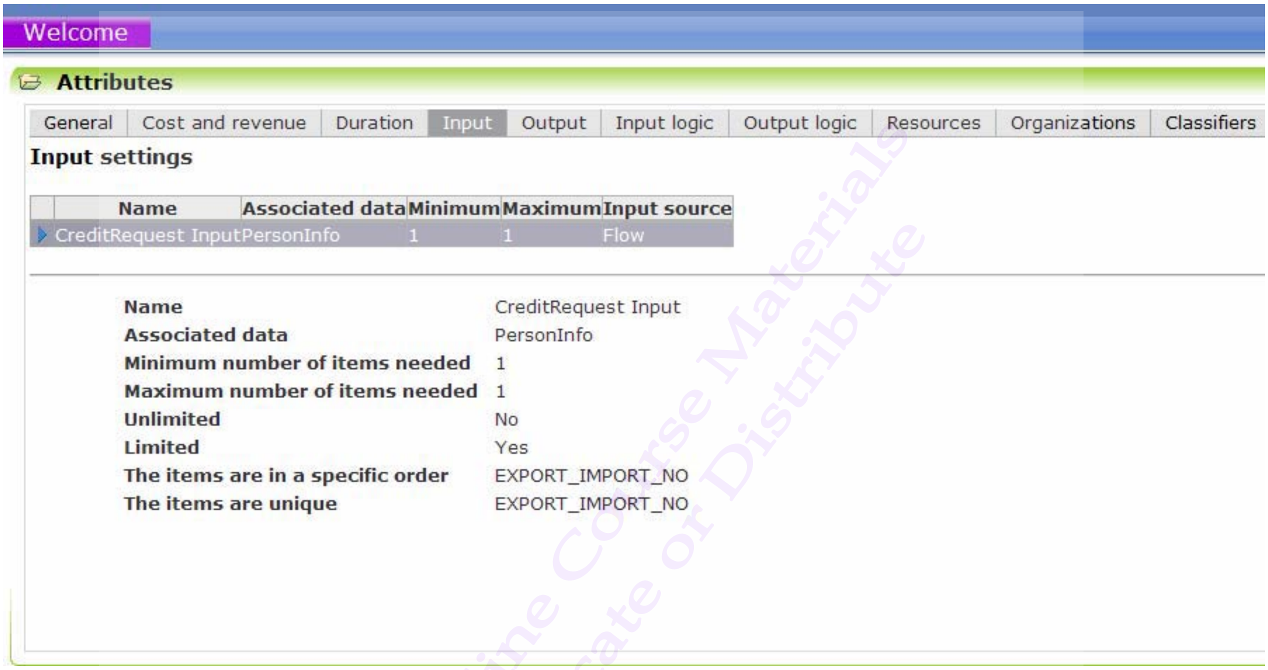
☐	Name	Size	Attached by	Added
☐	Comments.txt	199.0	wpsadmin	Wed Sep 21 16:09:47 EEST 2005
☐	http://www.acm.org	no size	wpsadmin	Wed Sep 21 16:10:04 EEST 2005

Figure 11-24. Attachment view VB1841.0

Notes:

Attributes view

- Switch between tabs to show attributes details
- Similar to the modeler's attributes view



Input settings

Name	Associated data	Minimum	Maximum	Input source
CreditRequest Input	PersonInfo	1	1	Flow

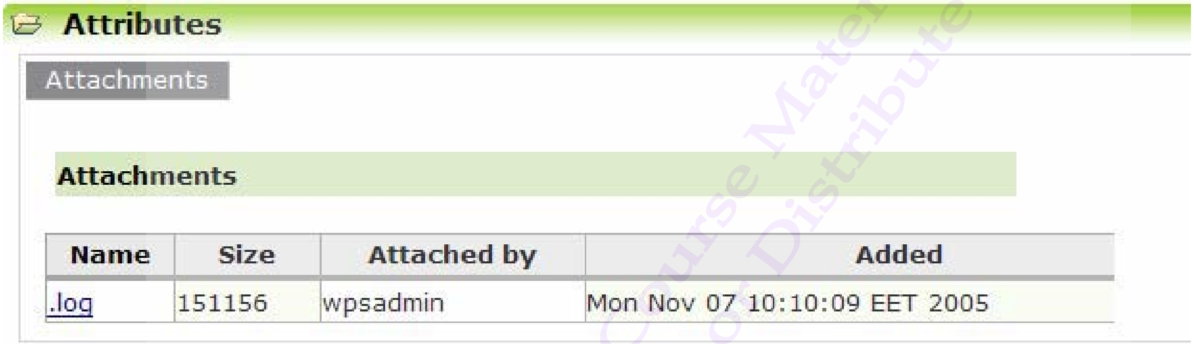
Name	CreditRequest Input
Associated data	PersonInfo
Minimum number of items needed	1
Maximum number of items needed	1
Unlimited	No
Limited	Yes
The items are in a specific order	EXPORT_IMPORT_NO
The items are unique	EXPORT_IMPORT_NO

Figure 11-25. Attributes view VB1841.0

Notes:

Attributes view: Model attachment

- The attached file is sent to the server with the published model.
- This file could not be removed from the publisher but from the business modeler.
- Only an authorized user can download the file.

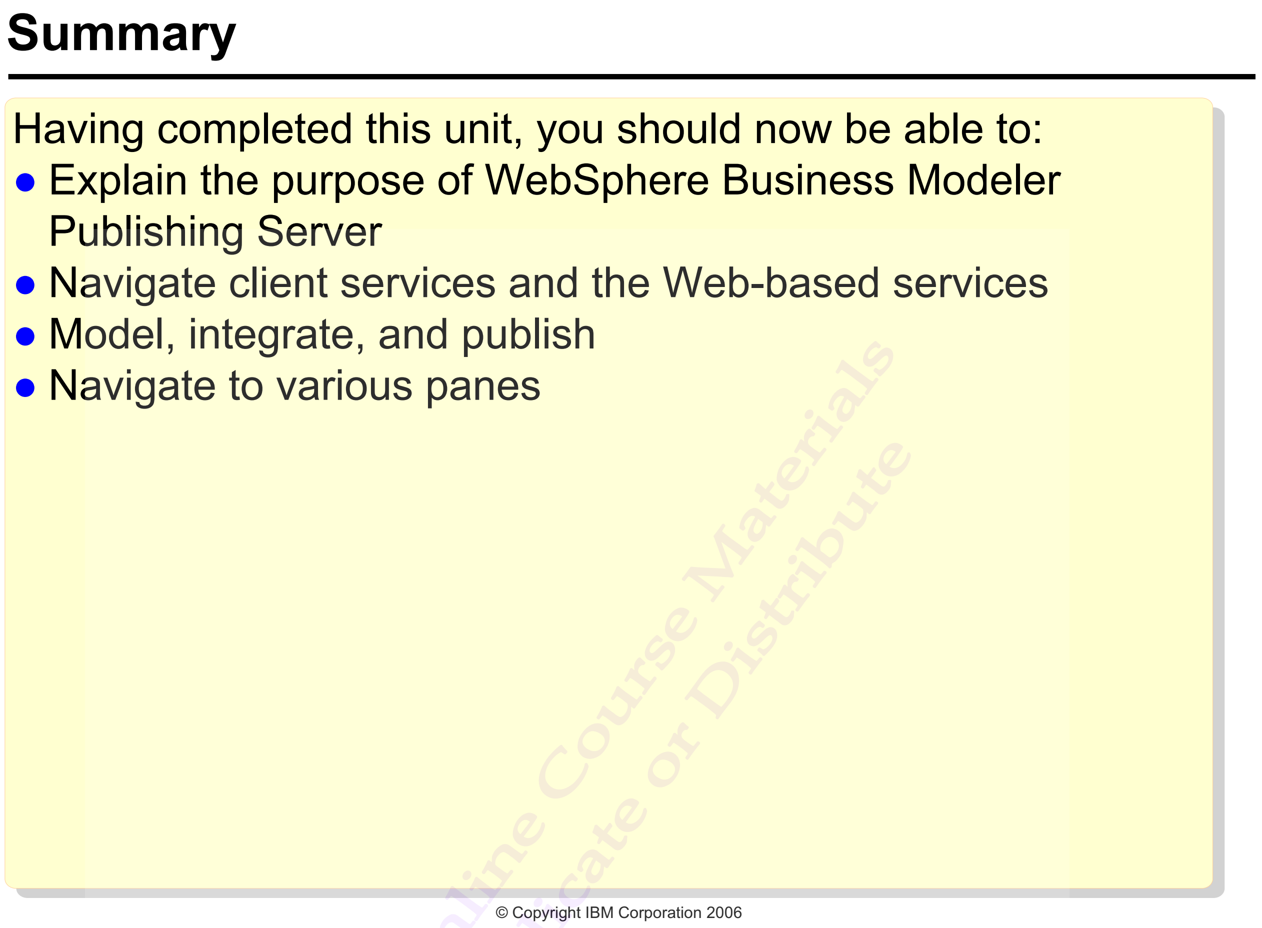


Attachments

Name	Size	Attached by	Added
.log	151156	wpsadmin	Mon Nov 07 10:10:09 EET 2005

Figure 11-26. Attributes view: Model attachment VB1841.0

Notes:



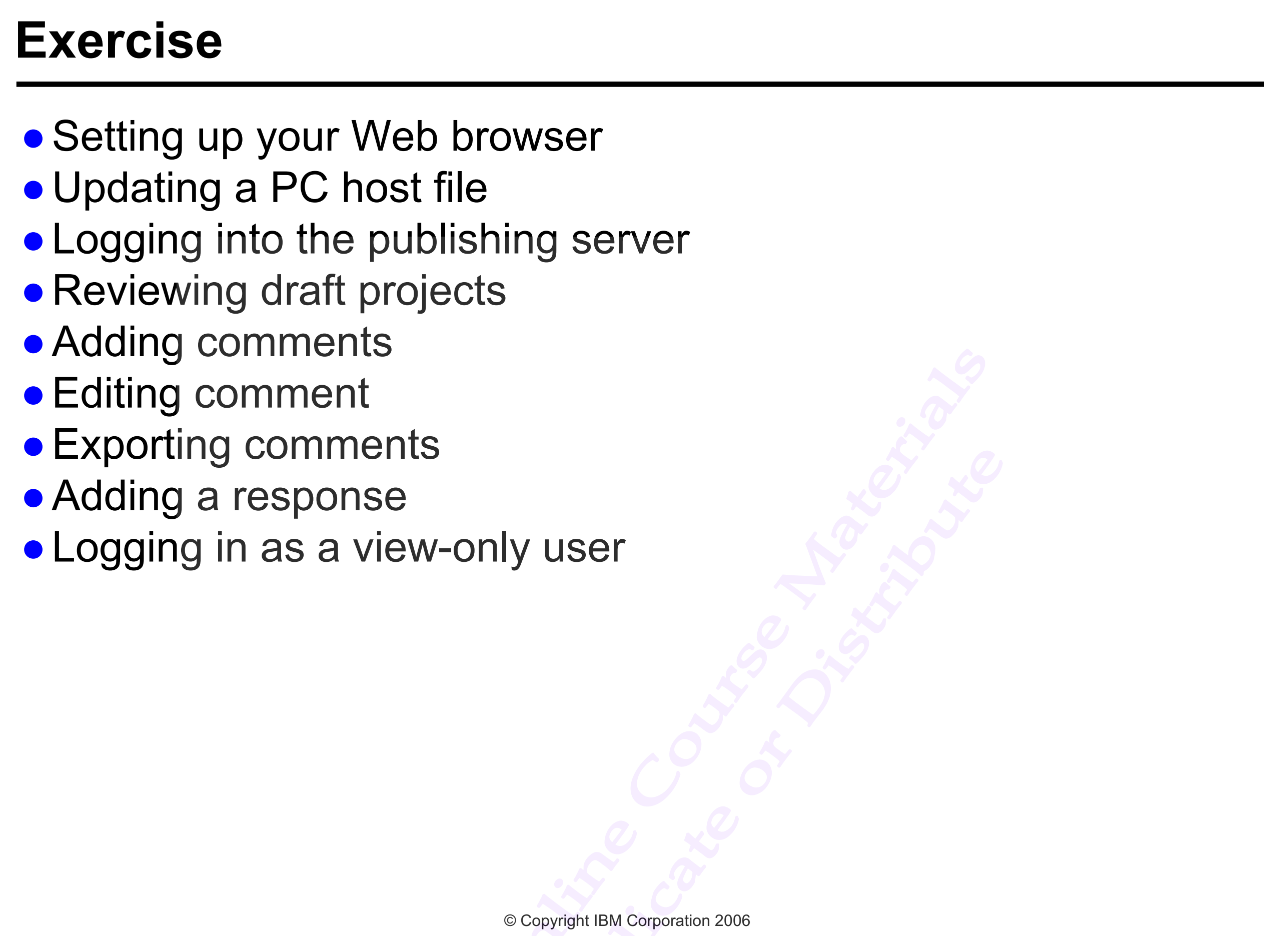
Summary

Having completed this unit, you should now be able to:

- Explain the purpose of WebSphere Business Modeler Publishing Server
- Navigate client services and the Web-based services
- Model, integrate, and publish
- Navigate to various panes

Figure 11-27. Summary VB1841.0

Notes:

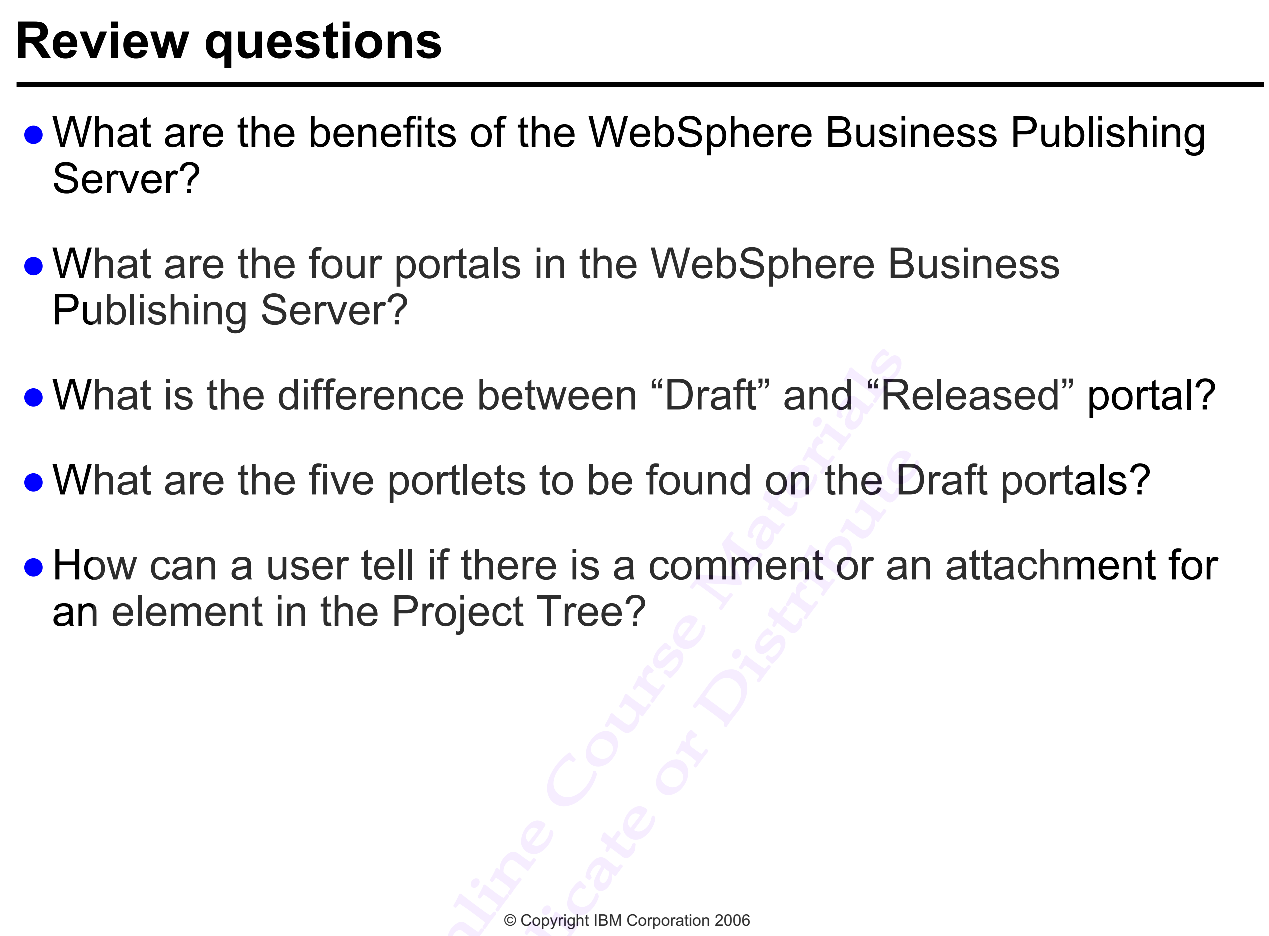


Exercise

- Setting up your Web browser
- Updating a PC host file
- Logging into the publishing server
- Reviewing draft projects
- Adding comments
- Editing comment
- Exporting comments
- Adding a response
- Logging in as a view-only user

Figure 11-28. Exercise VB1841.0

Notes:



Review questions

- What are the benefits of the WebSphere Business Publishing Server?
- What are the four portals in the WebSphere Business Publishing Server?
- What is the difference between “Draft” and “Released” portal?
- What are the five portlets to be found on the Draft portals?
- How can a user tell if there is a comment or an attachment for an element in the Project Tree?

Figure 11-29. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 12.Import and export

What this unit is about

This unit describes the import and export.

What you should be able to do

After completing this unit, you should be able to:

- Import from the following formats
- Import business services and business service objects
- Export from Modeler
- Migrate from WebSphere Business Modeler V5 to V6
- Migrate from WebSphere Business Integration Workbench V4.2.4

Objectives

After completing this unit, you should be able to:

- Import from the following formats:
  - Microsoft Visio
  - XML schema files
  - Delimited text files
- Import business services and business service objects
- Export from Modeler
- Migrate from WebSphere Business Modeler V5 to V6
- Migrate from WebSphere Business Integration Workbench V4.2.4

Figure 12-1. Objectives VB1841.0

Notes:

Importing and exporting

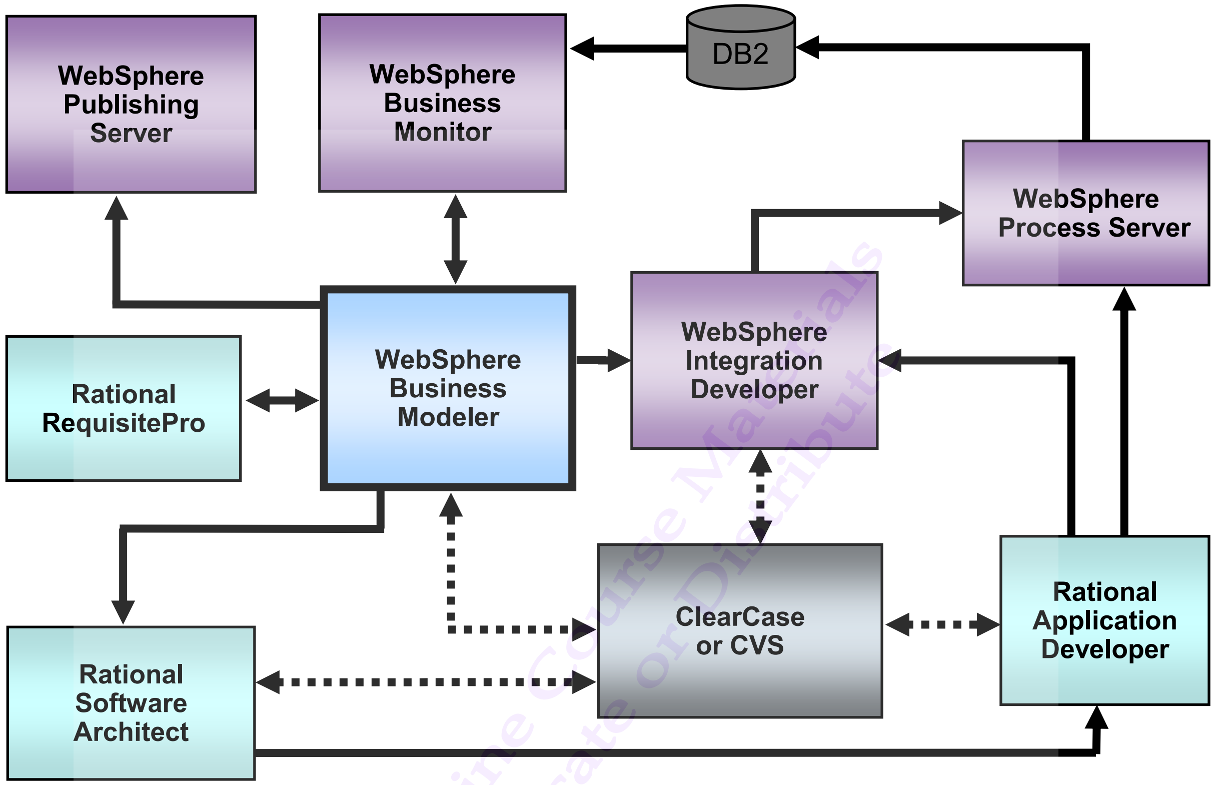

WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
WebSphere Integration Developer
Rational RequisitePro
WebSphere Business Modeler
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 12-2. Importing and exporting VB1841.0

Notes:

Legend:

- - - - - - Version control flow (dashed line)

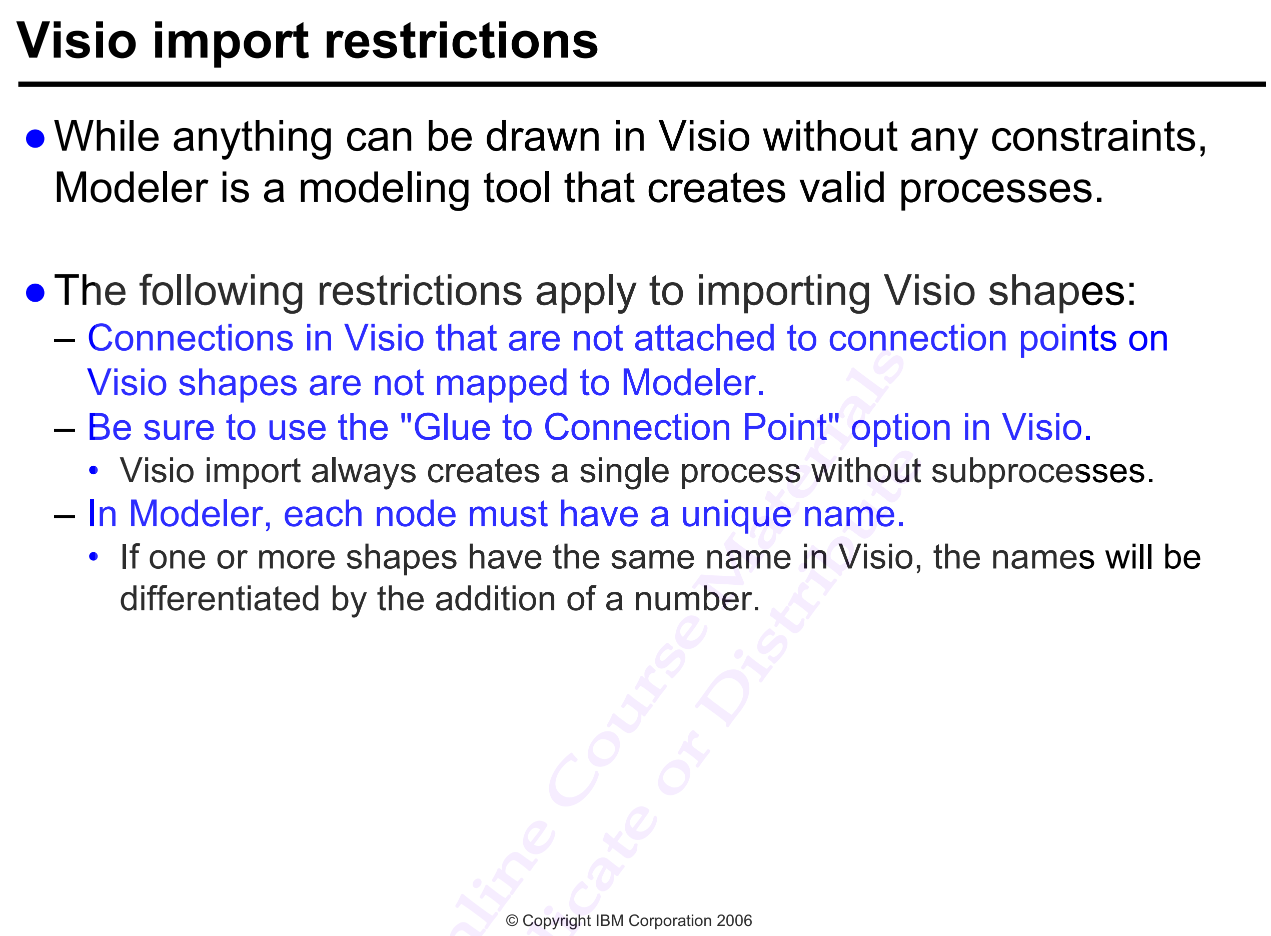
——— Development flow (solid line)

Importing from Microsoft Visio

- Import shapes from Microsoft Visio files from Microsoft Visio 2002 or 2003.
- These shapes can be used to create elements such as tasks and business items in Business Modeler.
- Predefined mappings include all shapes from the Basic Flowchart stencil, IDEF0 stencil, and SDL Diagram stencil.
- Customize your own mappings.

Figure 12-3. Importing from Microsoft Visio VB1841.0

Notes:

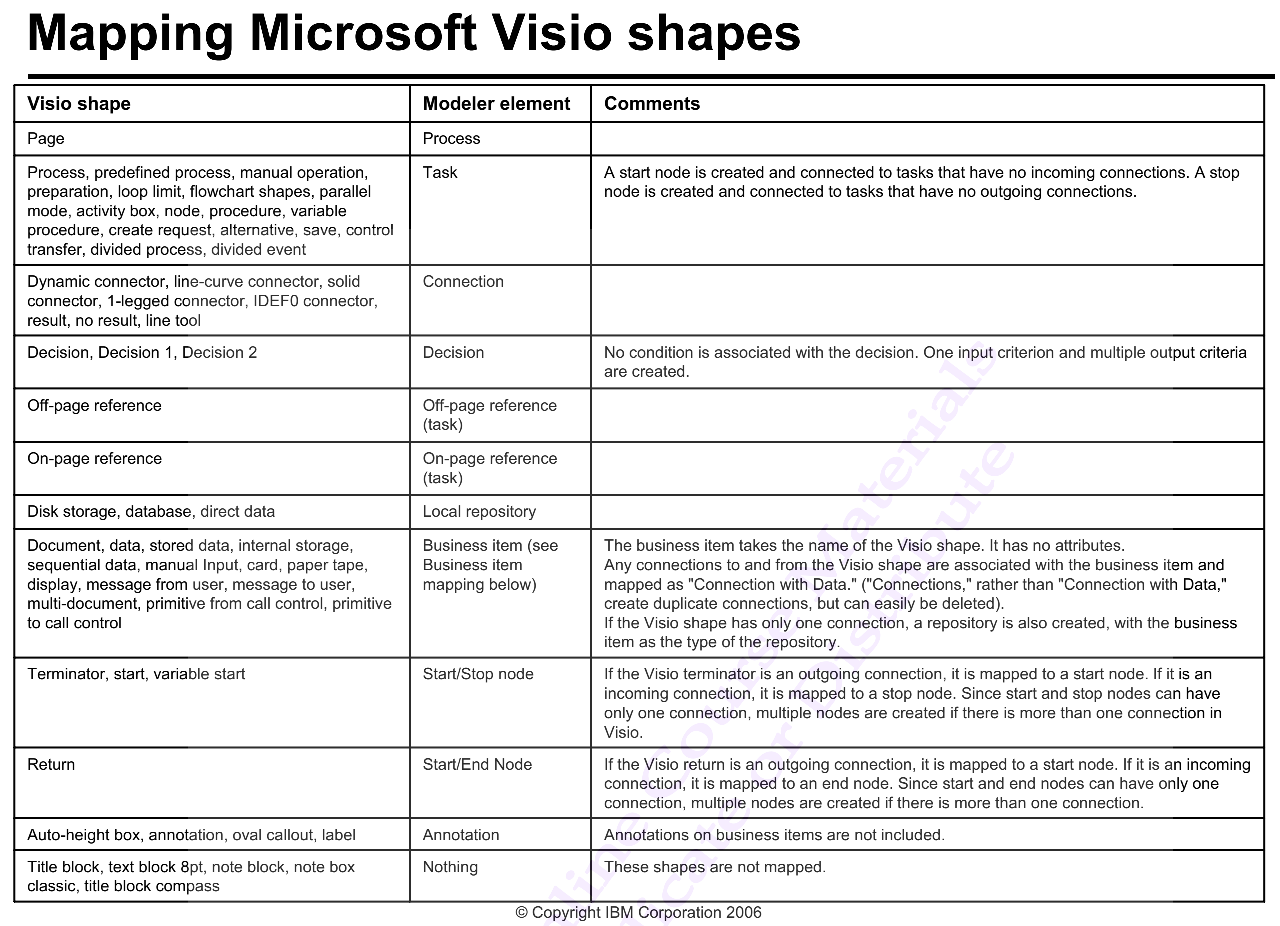


Visio import restrictions

- While anything can be drawn in Visio without any constraints, Modeler is a modeling tool that creates valid processes.
- The following restrictions apply to importing Visio shapes:
  - Connections in Visio that are not attached to connection points on Visio shapes are not mapped to Modeler.
  - Be sure to use the "Glue to Connection Point" option in Visio.
    - Visio import always creates a single process without subprocesses.
  - In Modeler, each node must have a unique name.
    - If one or more shapes have the same name in Visio, the names will be differentiated by the addition of a number.

Figure 12-4. Visio import restrictions VB1841.0

Notes:



Mapping Microsoft Visio shapes

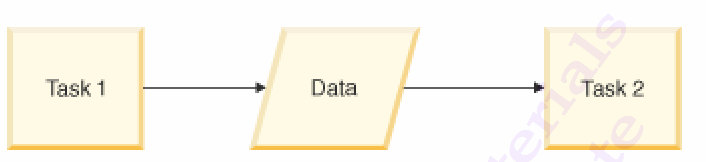
Visio shape	Modeler element	Comments
Page	Process	
Process, predefined process, manual operation, preparation, loop limit, flowchart shapes, parallel mode, activity box, node, procedure, variable procedure, create request, alternative, save, control transfer, divided process, divided event	Task	A start node is created and connected to tasks that have no incoming connections. A stop node is created and connected to tasks that have no outgoing connections.
Dynamic connector, line-curve connector, solid connector, 1-legged connector, IDEF0 connector, result, no result, line tool	Connection	
Decision, Decision 1, Decision 2	Decision	No condition is associated with the decision. One input criterion and multiple output criteria are created.
Off-page reference	Off-page reference (task)	
On-page reference	On-page reference (task)	
Disk storage, database, direct data	Local repository	
Document, data, stored data, internal storage, sequential data, manual Input, card, paper tape, display, message from user, message to user, multi-document, primitive from call control, primitive to call control	Business item (see Business item mapping below)	The business item takes the name of the Visio shape. It has no attributes. Any connections to and from the Visio shape are associated with the business item and mapped as "Connection with Data." ("Connections," rather than "Connection with Data," create duplicate connections, but can easily be deleted). If the Visio shape has only one connection, a repository is also created, with the business item as the type of the repository.
Terminator, start, variable start	Start/Stop node	If the Visio terminator is an outgoing connection, it is mapped to a start node. If it is an incoming connection, it is mapped to a stop node. Since start and stop nodes can have only one connection, multiple nodes are created if there is more than one connection in Visio.
Return	Start/End Node	If the Visio return is an outgoing connection, it is mapped to a start node. If it is an incoming connection, it is mapped to an end node. Since start and end nodes can have only one connection, multiple nodes are created if there is more than one connection.
Auto-height box, annotation, oval callout, label	Annotation	Annotations on business items are not included.
Title block, text block 8pt, note block, note box classic, title block compass	Nothing	These shapes are not mapped.

Figure 12-5. Mapping Microsoft Visio shapes VB1841.0

Notes:

Mapping to business items (1 of 4)

- One incoming and one outgoing connection
- The following shape to be mapped to a business item has both an incoming and an outgoing connection:



- If the Visio connection shape is mapped to a connection without data, the following is the result in Business Integration Modeler:

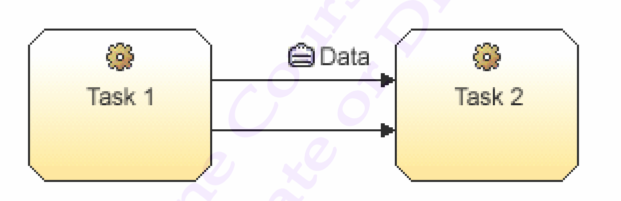


Figure 12-6. Mapping to business items (1 of 4) VB1841.0

Notes:

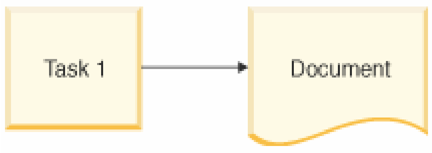
If the shape to be mapped to a business item has exactly one incoming connection and one outgoing connection, only a connection with data is created in Business Integration Modeler.

If the Visio connection shape is set to map to a connection without data, the connection is created as usual and a connection with data is added as well.

If the Visio connection shape is set to map to a connection with data, only the data connection is created.

Mapping to business items (2 of 4)

- One connection (either incoming or outgoing)
- The following shape to be mapped to a business item has only an outgoing connection:



- The following diagram shows the result in Modeler:

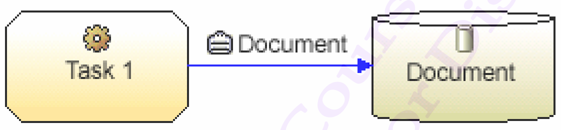


Figure 12-7. Mapping to business items (2 of 4) VB1841.0

Notes:

If the shape to be mapped to a business item has only one connection, either incoming or outgoing, the shape is mapped to a local repository whose type is the name of the shape.

Mapping to business items (3 of 4)

- Complex connections
- There are two connections into the shape and two connections out of the shape that is to be mapped to a business item:

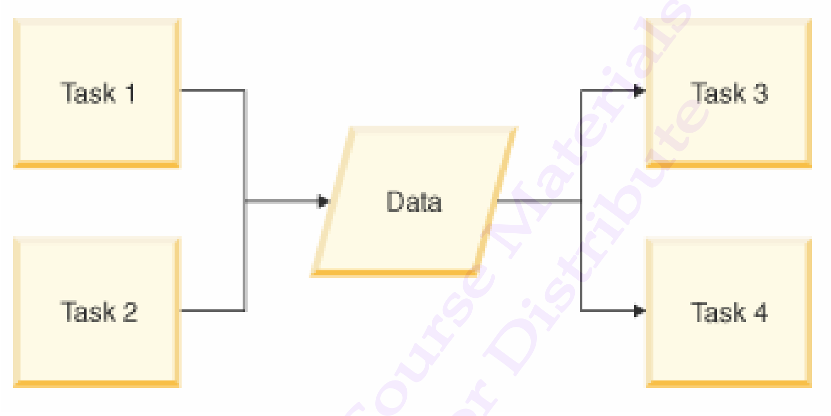


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Figure 12-8. Mapping to business items (3 of 4) VB1841.0

Notes:

An intermediate task is created in the following scenarios:

- There are multiple connections to and from the shape that is to be mapped to a business item.
- Two shapes that are both to be mapped to business items are connected to each other.
- The shape that is to be mapped to a business item is connected to a shape to be mapped to a repository.
- The shape that is to be mapped to a business item is connected to a shape to be mapped to a start, stop, or end node.

Mapping to business items (4 of 4)

- Complex connections
- The following diagram shows that an intermediate task is created in Modeler:

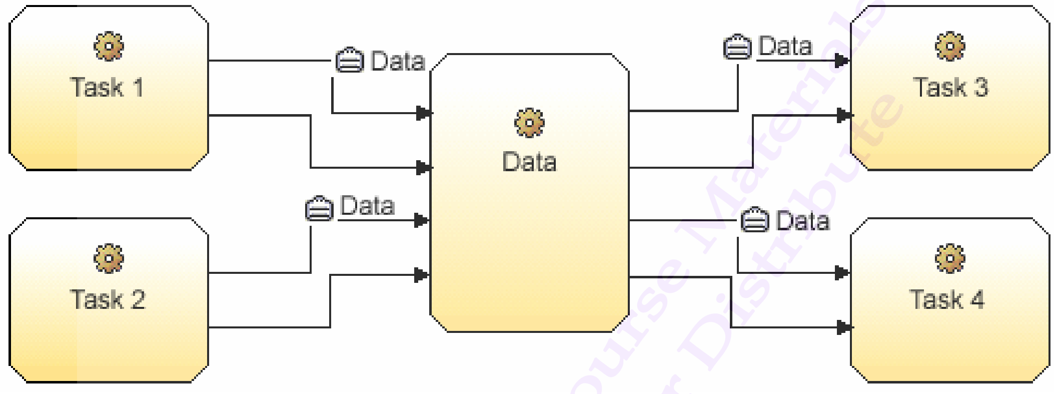

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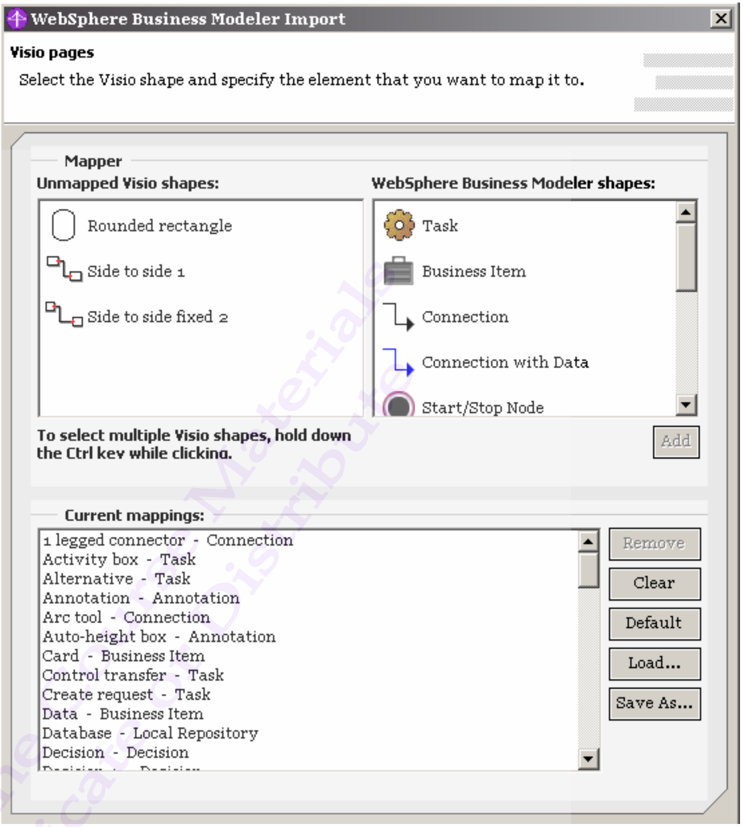
Figure 12-9. Mapping to business items (4 of 4) VB1841.0

Notes:

XML file format

- XML file that contains the mapping between Microsoft Visio shapes and Business Modeler elements.
- The mapping file is in XML format and can be edited directly.
- To create the first mapping file, start the import wizard, select **Visio**, and on the mapping page, click **Save As** to store the current mappings in an XML file.



Visio pages

Select the Visio shape and specify the element that you want to map it to.

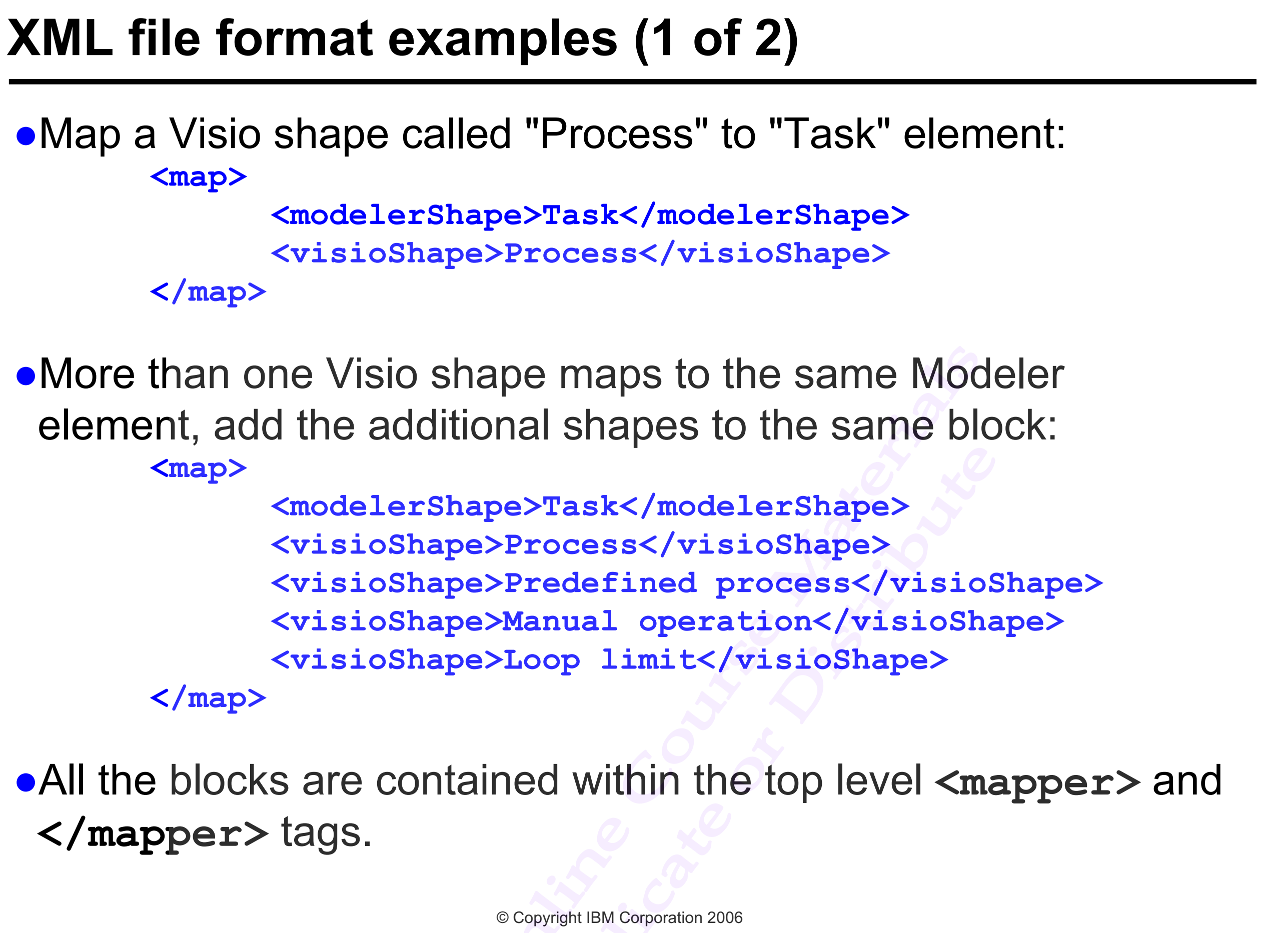
To select multiple Visio shapes, hold down the Ctrl key while clicking.

1 legged connector - Connection
Activity box - Task
Alternative - Task
Annotation - Annotation
Arc tool - Connection
Auto-height box - Annotation
Card - Business Item
Control transfer - Task
Create request - Task
Data - Business Item
Database - Local Repository
Decision - Decision

Figure 12-10. XML file format VB1841.0

Notes:

Self-Paced Online Materials
Do Not Duplicate or Distribute



XML file format examples (1 of 2)

- Map a Visio shape called "Process" to "Task" element:

```
<map>
      <modelerShape>Task</modelerShape>
      <visioShape>Process</visioShape>
</map>
```

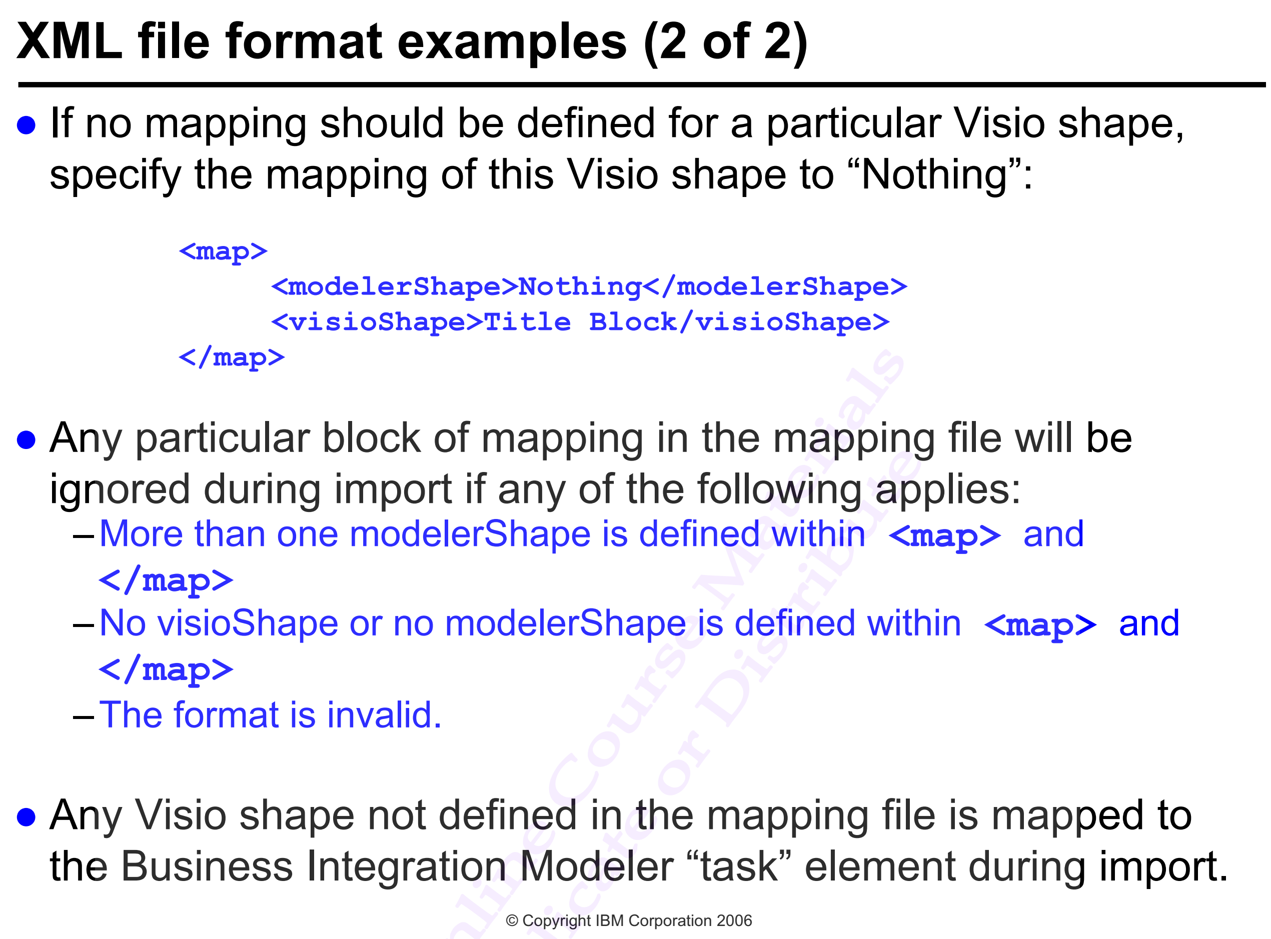
- More than one Visio shape maps to the same Modeler element, add the additional shapes to the same block:

```
<map>
      <modelerShape>Task</modelerShape>
      <visioShape>Process</visioShape>
      <visioShape>Predefined process</visioShape>
      <visioShape>Manual operation</visioShape>
      <visioShape>Loop limit</visioShape>
</map>
```

- All the blocks are contained within the top level **`<mapper>`** and **`</mapper>`** tags.

Figure 12-11. XML file format examples (1 of 2) VB1841.0

Notes:



XML file format examples (2 of 2)

- If no mapping should be defined for a particular Visio shape, specify the mapping of this Visio shape to “Nothing”:

```
<map>
     <modelerShape>Nothing</modelerShape>
     <visioShape>Title Block/visioShape>
</map>
```

- Any particular block of mapping in the mapping file will be ignored during import if any of the following applies:
  - More than one modelerShape is defined within **`<map>`** and **`</map>`**
  - No visioShape or no modelerShape is defined within **`<map>`** and **`</map>`**
  - The format is invalid.

- Any Visio shape not defined in the mapping file is mapped to the Business Integration Modeler “task” element during import.

Figure 12-12. XML file format examples (2 of 2) VB1841.0

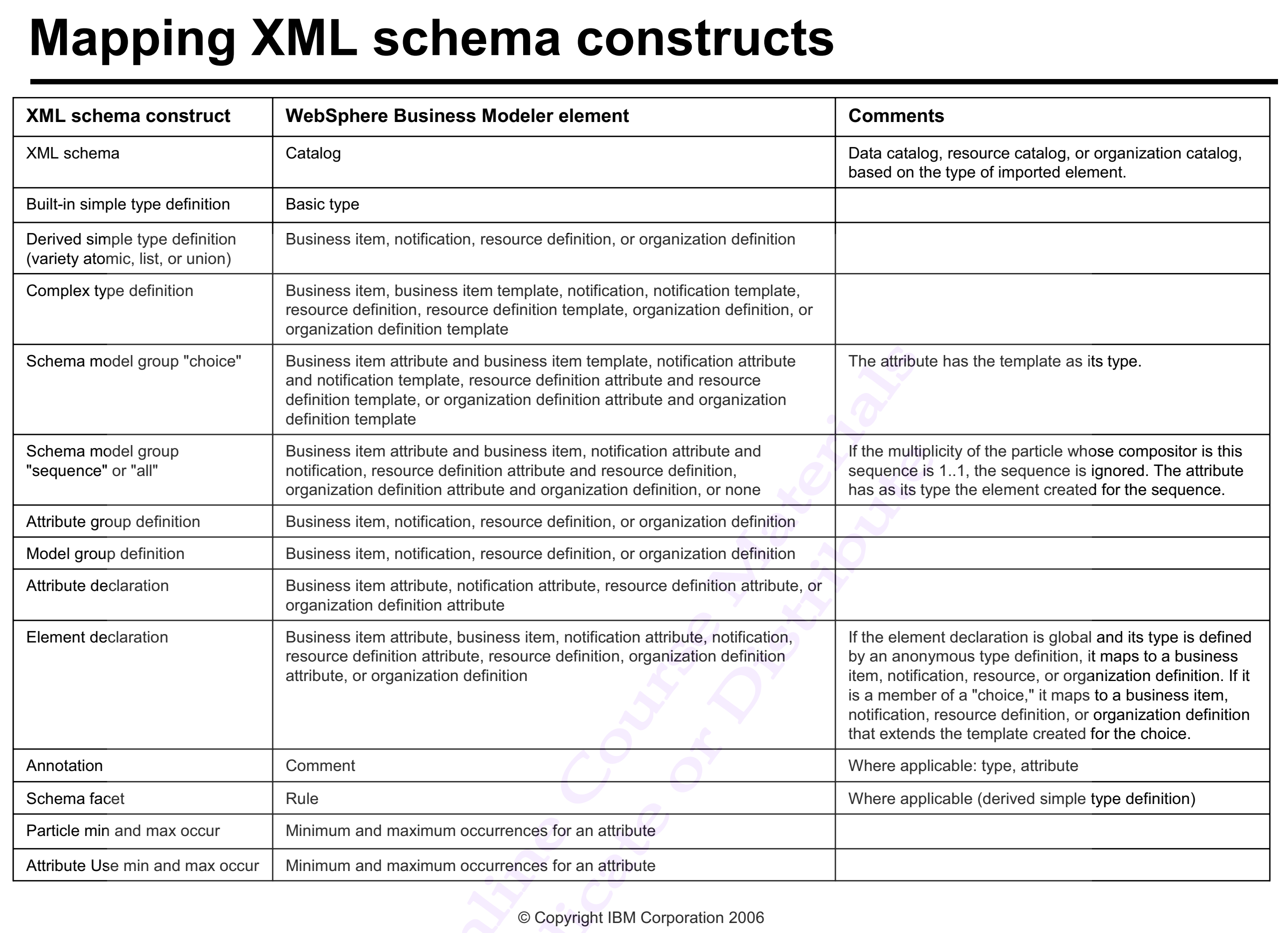
Notes:

XML Schema Definition import reference

- The following types of elements and attributes can be imported from XML Schema Definition (XSD) files into Modeler:
  - Business item templates
  - Business items
  - Notification templates
  - Notifications
  - Resource definition templates
  - Resource definitions
  - Organization definition templates
  - Organization definitions

Figure 12-13. XML Schema Definition import reference VB1841.0

Notes:



Mapping XML schema constructs

XML schema construct	WebSphere Business Modeler element	Comments
XML schema	Catalog	Data catalog, resource catalog, or organization catalog, based on the type of imported element.
Built-in simple type definition	Basic type	
Derived simple type definition (variety atomic, list, or union)	Business item, notification, resource definition, or organization definition	
Complex type definition	Business item, business item template, notification, notification template, resource definition, resource definition template, organization definition, or organization definition template	
Schema model group "choice"	Business item attribute and business item template, notification attribute and notification template, resource definition attribute and resource definition template, or organization definition attribute and organization definition template	The attribute has the template as its type.
Schema model group "sequence" or "all"	Business item attribute and business item, notification attribute and notification, resource definition attribute and resource definition, organization definition attribute and organization definition, or none	If the multiplicity of the particle whose compositor is this sequence is 1..1, the sequence is ignored. The attribute has as its type the element created for the sequence.
Attribute group definition	Business item, notification, resource definition, or organization definition	
Model group definition	Business item, notification, resource definition, or organization definition	
Attribute declaration	Business item attribute, notification attribute, resource definition attribute, or organization definition attribute	
Element declaration	Business item attribute, business item, notification attribute, notification, resource definition attribute, resource definition, organization definition attribute, or organization definition	If the element declaration is global and its type is defined by an anonymous type definition, it maps to a business item, notification, resource, or organization definition. If it is a member of a "choice," it maps to a business item, notification, resource definition, or organization definition that extends the template created for the choice.
Annotation	Comment	Where applicable: type, attribute
Schema facet	Rule	Where applicable (derived simple type definition)
Particle min and max occur	Minimum and maximum occurrences for an attribute	
Attribute Use min and max occur	Minimum and maximum occurrences for an attribute	

Figure 12-14. Mapping XML schema constructs VB1841.0

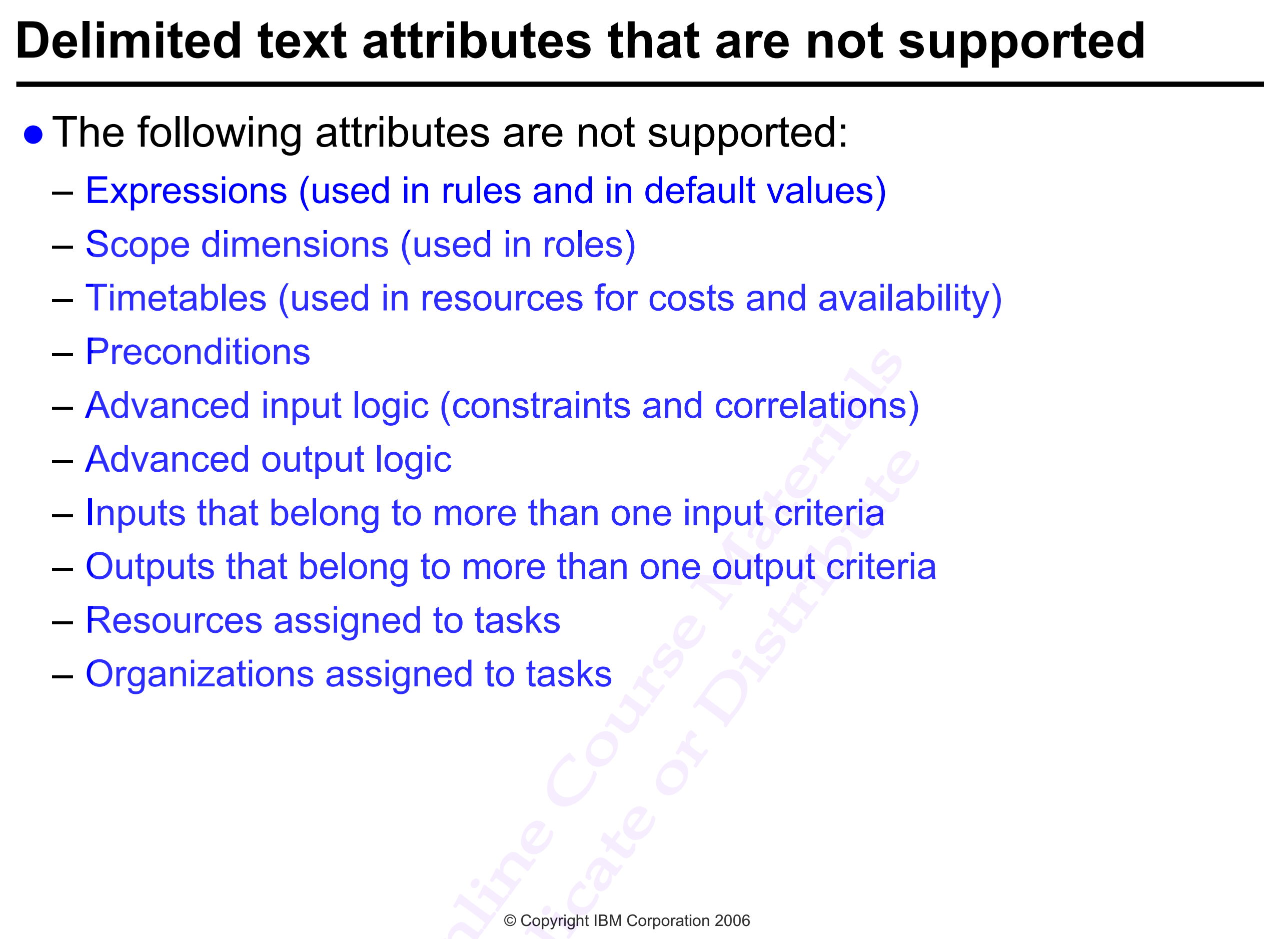
Notes:

Delimited text import reference

- The following elements can be created by importing delimited text files in the correct format:
  - Business item templates
  - Business items
  - Resource definition templates
  - Resource definitions
  - Resources
  - Roles
  - Organization definition templates
  - Organization definitions
  - Organization units
  - Global tasks

Figure 12-15. Delimited text import reference VB1841.0

Notes:



Delimited text attributes that are not supported

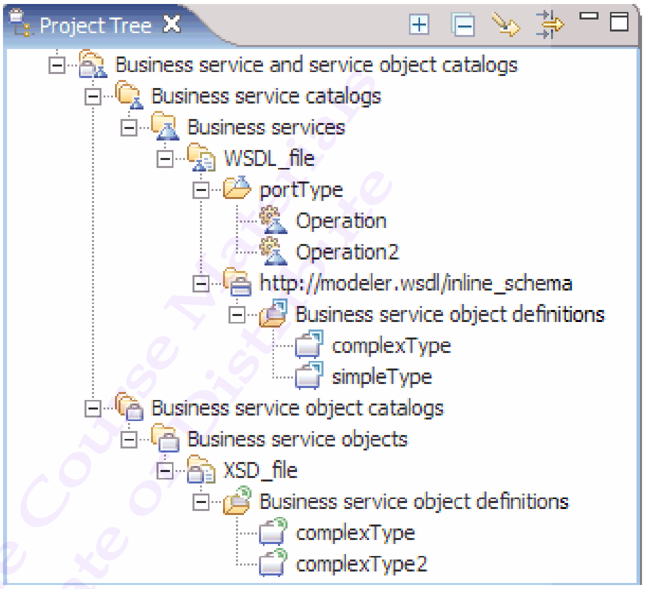
- The following attributes are not supported:
  - Expressions (used in rules and in default values)
  - Scope dimensions (used in roles)
  - Timetables (used in resources for costs and availability)
  - Preconditions
  - Advanced input logic (constraints and correlations)
  - Advanced output logic
  - Inputs that belong to more than one input criteria
  - Outputs that belong to more than one output criteria
  - Resources assigned to tasks
  - Organizations assigned to tasks

Figure 12-16. Delimited text attributes that are not supported VB1841.0

Notes:

Business services and business service objects

- Import business services and business service objects
  - Business services are model element representations of WSDL (Web Services Definition Language) files.
  - Business service objects are model element representations of XSD (XML schema) files.
- Import business services and business service objects that are defined in WebSphere Service Registry and Repository server
- Import into their own folders



- Business service and service object catalogs
  - Business service catalogs
    - Business services
      - WSDL_file
        - portType
          - Operation
          - Operation2
        - http://modeler.wsdl/inline_schema
          - Business service object definitions
            - complexType
            - simpleType
  - Business service object catalogs
    - Business service objects
      - XSD_file
        - Business service object definitions
          - complexType
          - complexType2

Figure 12-17. Business services and business service objects VB1841.0

Notes:

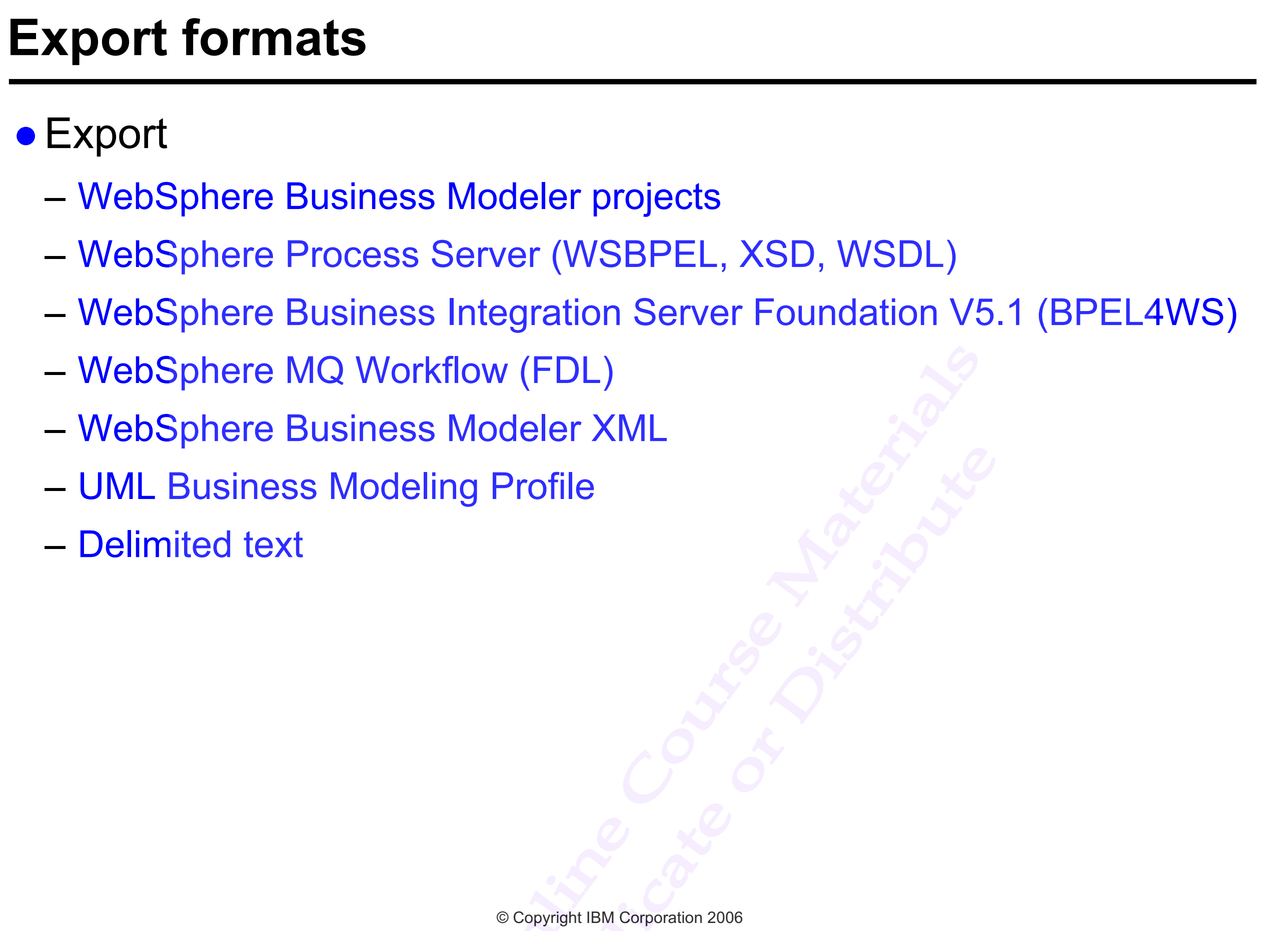
What is the IBM WebSphere Service Registry and Repository?

WebSphere Service Registry and Repository is a system for storing, accessing, and managing information, commonly referred as service metadata, used in the selection, invocation, management, governance, and reuse of services in a successful SOA. In other words, it is where you store information about services in your systems, or in other organizations' systems, that you already use, plan to use, or want to be aware of. For example, an application can check the Registry and Repository just before invoking a service to locate the service instance best satisfying its functionality and performance needs. Registry and Repository also play a role in other stages of the SOA life cycle.

IBM's view of a Registry and Repository encompasses:

- **Service Registry** that contains information about services, such as their interfaces, operations, and parameters

- **Metadata Repository** providing a robust, extensible framework to suit the diverse nature of service usage



Export formats

- Export
  - WebSphere Business Modeler projects
  - WebSphere Process Server (WSBPEL, XSD, WSDL)
  - WebSphere Business Integration Server Foundation V5.1 (BPEL4WS)
  - WebSphere MQ Workflow (FDL)
  - WebSphere Business Modeler XML
  - UML Business Modeling Profile
  - Delimited text

Figure 12-18. Export formats VB1841.0

Notes:

WebSphere Business Modeler project exports the selected project or elements into an archive file. This file can then be imported by another copy of WebSphere Business Modeler.

UML Business Modeling Profile exports the selected project or elements into a UML 1.4 XMI 1.1 file. Each data definition is mapped to a UML class, and each process is mapped to a UML use case and associated with a UML activity graph to represent the process flow. The resulting file of the export can be imported into IBM Rational XDE (eXtended Development Environment) 2003.06.00 or 2003.06.12 edition.

WebSphere MQ Workflow exports the selected project or element into an FDL file. This file can then be imported into IBM WebSphere MQ Workflow Buildtime.

WebSphere Business Integration Server Foundation V5.1 exports the selected project or elements into BPEL, WSDL, and XSD files. These files can then be imported into IBM WebSphere Studio Application Developer, Integration Edition for Linux and Windows.

Delimited text exports the selected project or element into a text file. The fields that describe elements are separated by delimiters (special characters). The delimited text file can be imported into any application, such as Microsoft Excel, that imports delimited text.

WebSphere Business Modeler XML exports the selected project or element into an XML file. The file conforms to the WebSphere Business Modeler schema. The schema provides an external interchange format that other modeling tools can use to obtain information from WebSphere Business Modeler. The schema is in the `\samples\import\xml` folder.

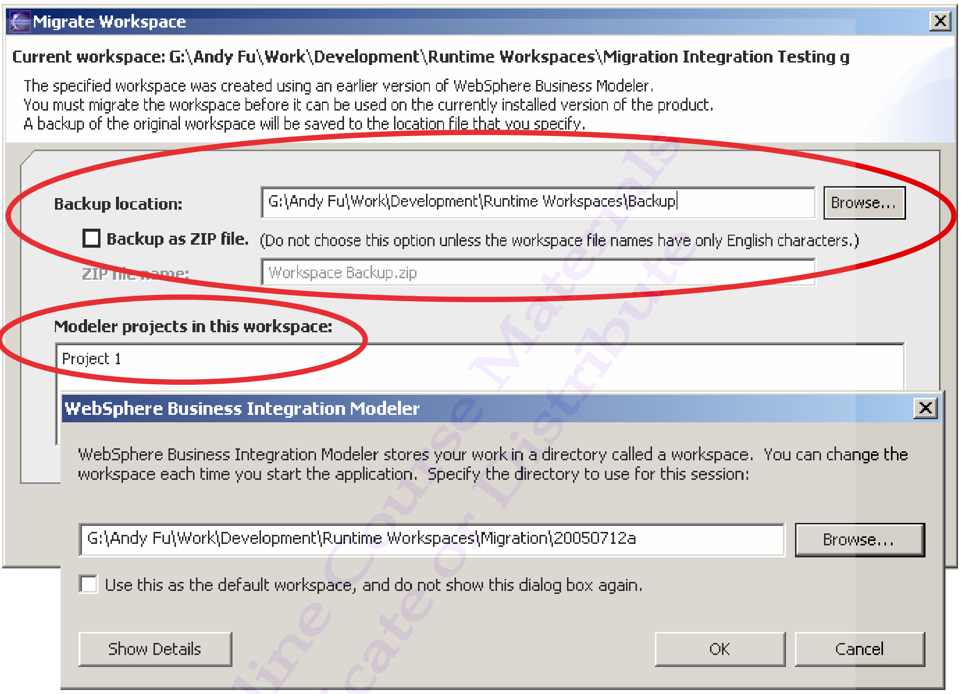
WebSphere Process Server for exporting SCA (Service Component Architecture) artifacts and BPEL, WSDL, and XSD files that can be imported into WebSphere Integration Developer.

Workspace migration from V5.1

- Input: A workspace containing projects from WebSphere Business Integration Modeler V5.1
- Output: A workspace containing V6.0 WebSphere Business Modeler projects
  - Plus a backup of the input workspace
- Steps:

1. Select a workspace created on Modeler V5.1.
2. Set location for the workspace backup.
3. Select projects in the workspace that require migration.

- After successful migration, Modeler V6.0 restarts in the new workspace.



Migrate Workspace

Current workspace: G:\Andy Fu\Work\Development\Runtime Workspaces\Migration Integration Testing g

The specified workspace was created using an earlier version of WebSphere Business Modeler.
You must migrate the workspace before it can be used on the currently installed version of the product.
A backup of the original workspace will be saved to the location file that you specify.

Backup location: G:\Andy Fu\Work\Development\Runtime Workspaces\Backup

☐ Backup as ZIP file. (Do not choose this option unless the workspace file names have only English characters.)

ZIP file name: Workspace Backup.zip

Modeler projects in this workspace:

Project 1

WebSphere Business Integration Modeler

WebSphere Business Integration Modeler stores your work in a directory called a workspace. You can change the workspace each time you start the application. Specify the directory to use for this session:

G:\Andy Fu\Work\Development\Runtime Workspaces\Migration\20050712a

☐ Use this as the default workspace, and do not show this dialog box again.

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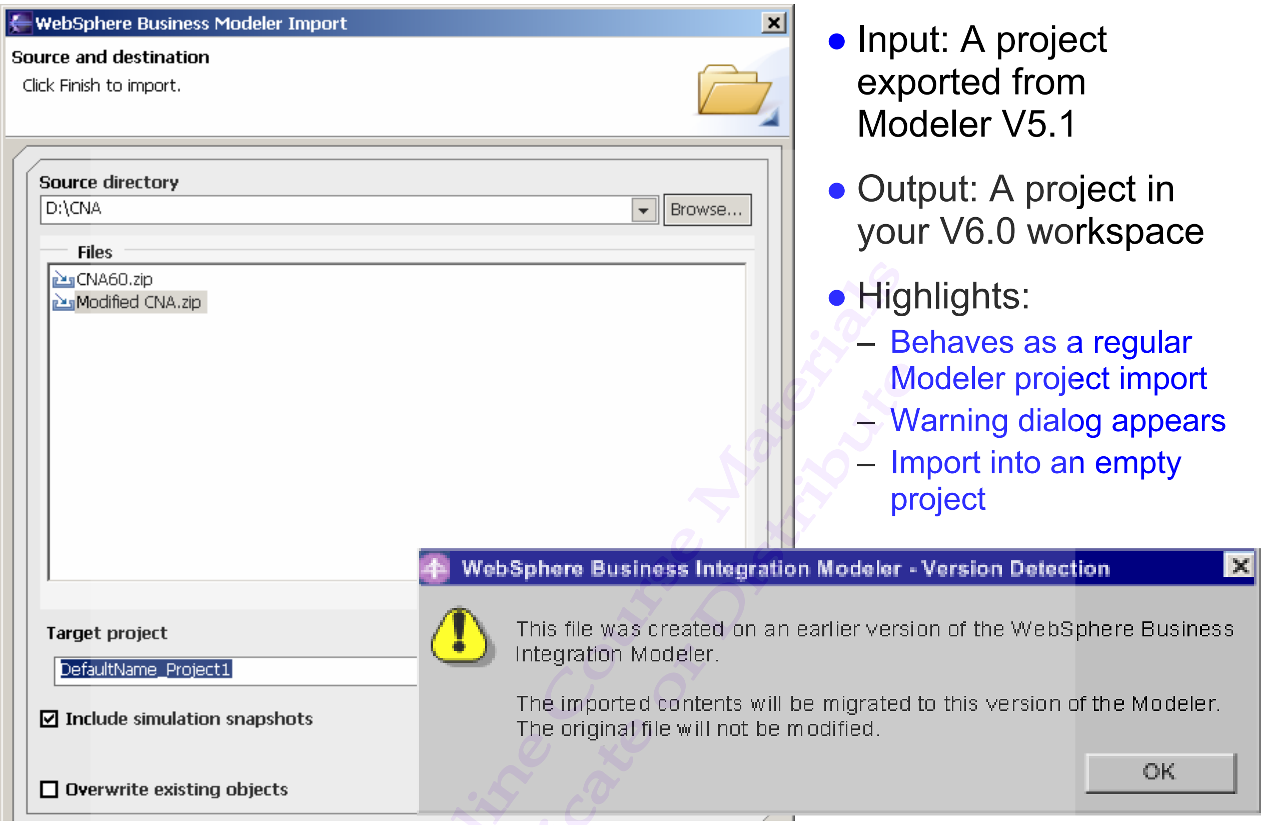
Figure 12-19. Workspace migration from V5.1 VB1841.0

Notes:

Project import from V5.1


WebSphere Business Modeler Import
Browse...
Files
WebSphere Business Integration Modeler - Version Detection
OK

Source and destination

Click Finish to import.

Source directory: D:\CNA

Files:
- CNA60.zip
- Modified CNA.zip

Target project: DefaultName_Project1

☑ Include simulation snapshots

☐ Overwrite existing objects

This file was created on an earlier version of the WebSphere Business Integration Modeler.

The imported contents will be migrated to this version of the Modeler. The original file will not be modified.

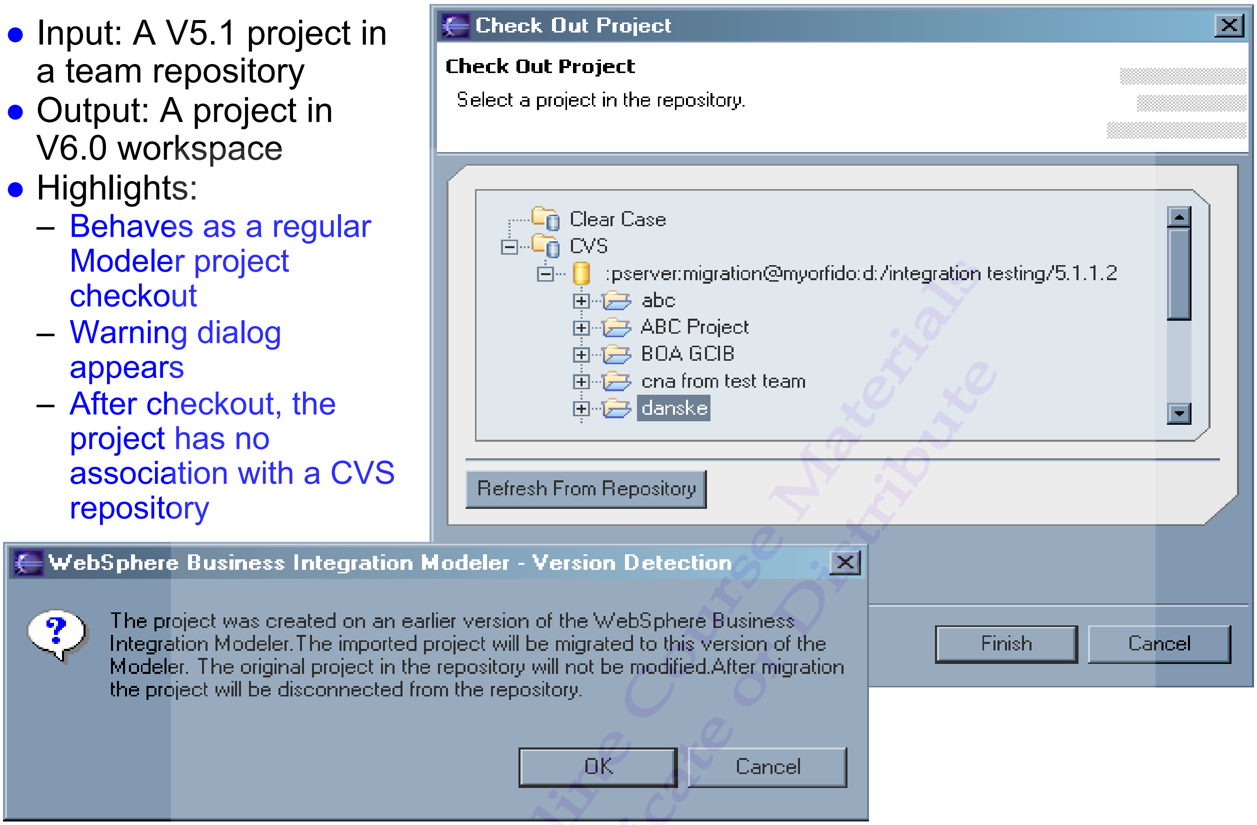
- Input: A project exported from Modeler V5.1
- Output: A project in your V6.0 workspace
- Highlights:
  - Behaves as a regular Modeler project import
  - Warning dialog appears
  - Import into an empty project

Figure 12-20. Project import from V5.1 VB1841.0

Notes:

Project check out of V5.1 project

- Input: A V5.1 project in a team repository
- Output: A project in V6.0 workspace
- Highlights:
  - Behaves as a regular Modeler project checkout
  - Warning dialog appears
  - After checkout, the project has no association with a CVS repository



Select a project in the repository.

The project was created on an earlier version of the WebSphere Business Integration Modeler.The imported project will be migrated to this version of the Modeler. The original project in the repository will not be modified.After migration the project will be disconnected from the repository.

Figure 12-21. Project checkout of V5.1 project VB1841.0

Notes:

Import and migration using WebSphere Business Modeler V6.0.1

If errors occur during migration or import, they are now displayed with their error codes. In many cases this will make it easier to find additional explanatory and corrective information in the documentation.

If errors occur during a project import, it is now possible to save the error log to a text file.

The results of a workspace migration are now displayed on a project-by-project basis.

Enhancements have been made to reduce the amount of memory used when importing a number of projects in succession.

Results of successful migration

- Simulation results removed
- User-defined report templates removed
- New predefined report templates
- New predefined event definitions
- Shared projects are disconnected from CVS

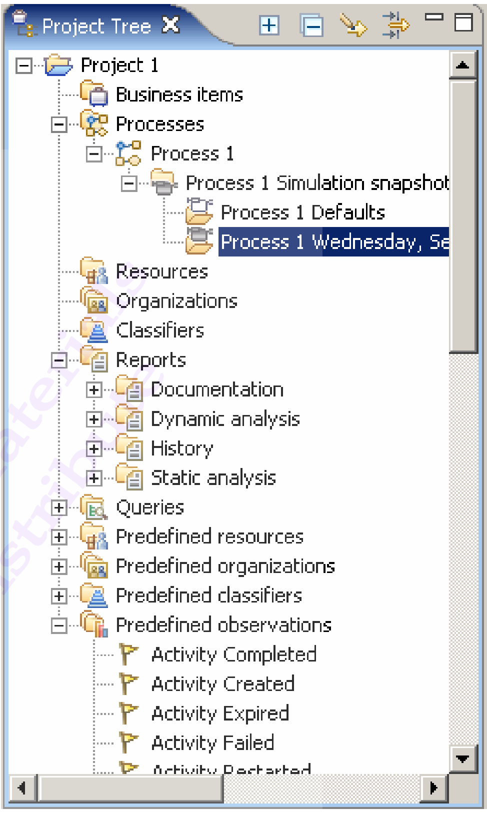
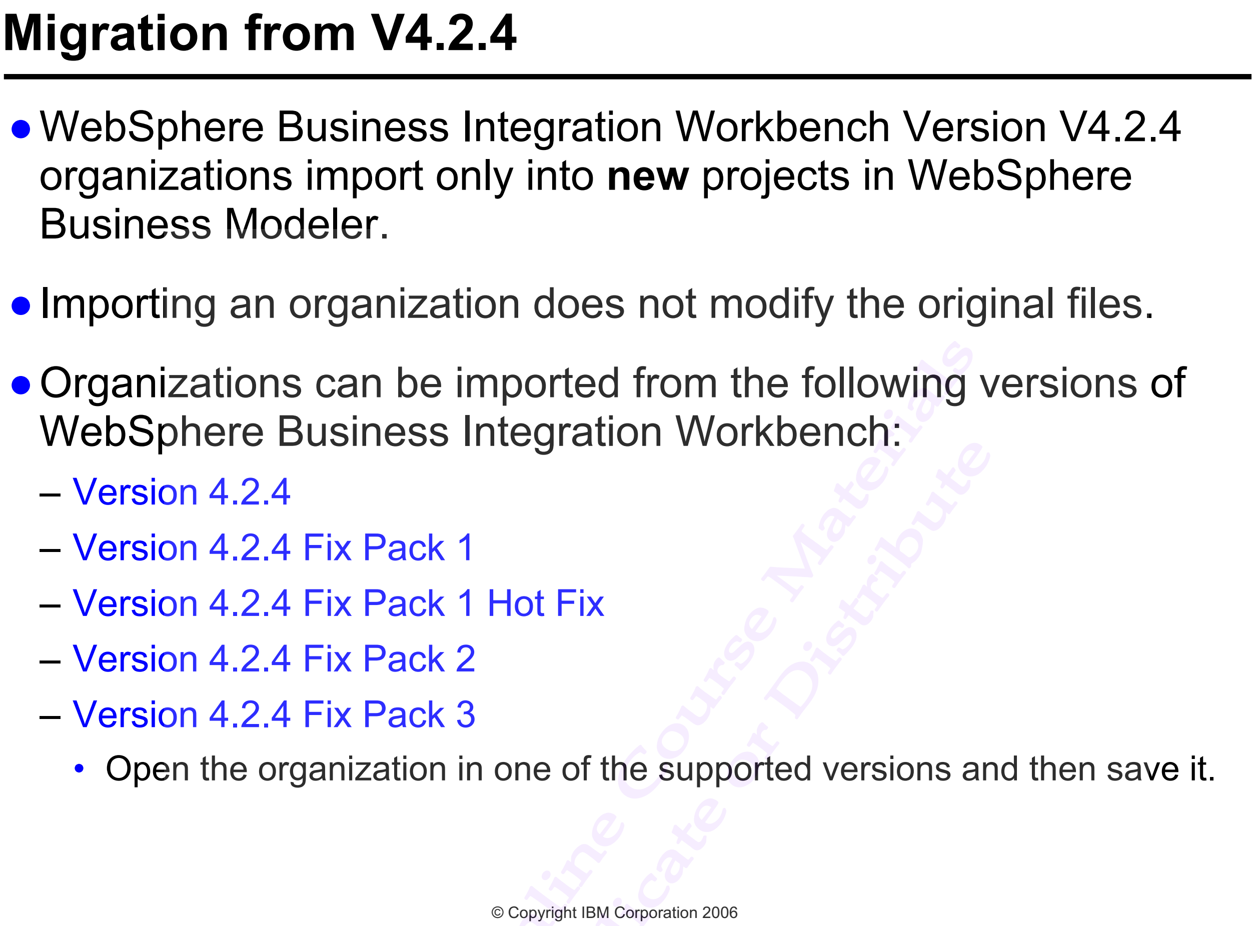


Figure 12-22. Results of successful migration

VB1841.0

Notes:



Migration from V4.2.4

- WebSphere Business Integration Workbench Version V4.2.4 organizations import only into **new** projects in WebSphere Business Modeler.
- Importing an organization does not modify the original files.
- Organizations can be imported from the following versions of WebSphere Business Integration Workbench:
  - Version 4.2.4
  - Version 4.2.4 Fix Pack 1
  - Version 4.2.4 Fix Pack 1 Hot Fix
  - Version 4.2.4 Fix Pack 2
  - Version 4.2.4 Fix Pack 3
    - Open the organization in one of the supported versions and then save it.

Figure 12-23. Migration from V4.2.4 VB1841.0

Notes:

Migration from V4.2.4: Import an organization

- To import an organization into WebSphere Business Modeler, complete the following steps:
  1. In the Project Tree, right-click and select **Import** to open the Import wizard.
  2. Select **WebSphere Business Integration Modeler V4.2.4 (.org)** and click **Next**.
  3. In the Source directory field, specify the source directory of the organization (.org file) to import.
  4. The **Files** field displays available organizations. Select the organization to import.
  5. Specify a name for the new project to create from the organization, and click **Finish**.
     - A new project is created and its name appears in the **Target project** field.
  6. Select the mapping preference that you want to use for the import.
     - Select **MQ-Workflow** to build a model with automated processes using MQ Workflow.
       - A model imported with this option contains the attributes required by MQ Workflow.
     - Select **Non-MQ Workflow** for all other purposes.
     - **Preferences** sets which WebSphere Business Modeler elements replace the elements in the original model, if migrated at all.
  7. For an organization in which some of the models are meant for use with MQ Workflow and some of the models are not, import the .org file twice, creating a new project for each option.

Figure 12-24. Migration from V4.2.4: Import an organization VB1841.0

Notes:

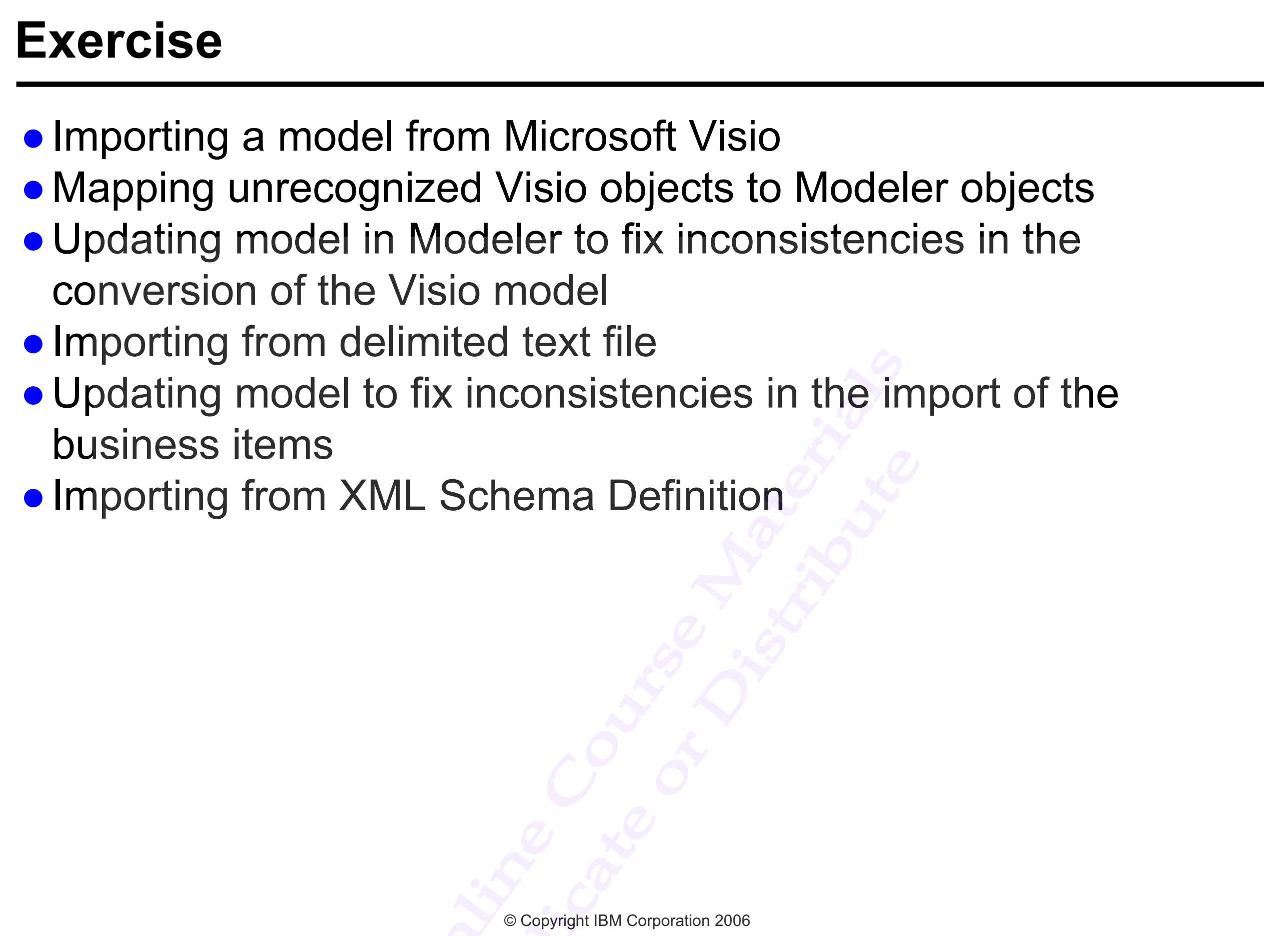
Summary

Having completed this unit, you should now be able to:

- Import from the following formats:
  - Microsoft Visio
  - XML schema files
  - Delimited text files
- Migrate from WebSphere Business Modeler V5 to V6
- Migrate from WebSphere Business Integration Workbench V4.2.4

Figure 12-25. Summary VB1841.0

Notes:

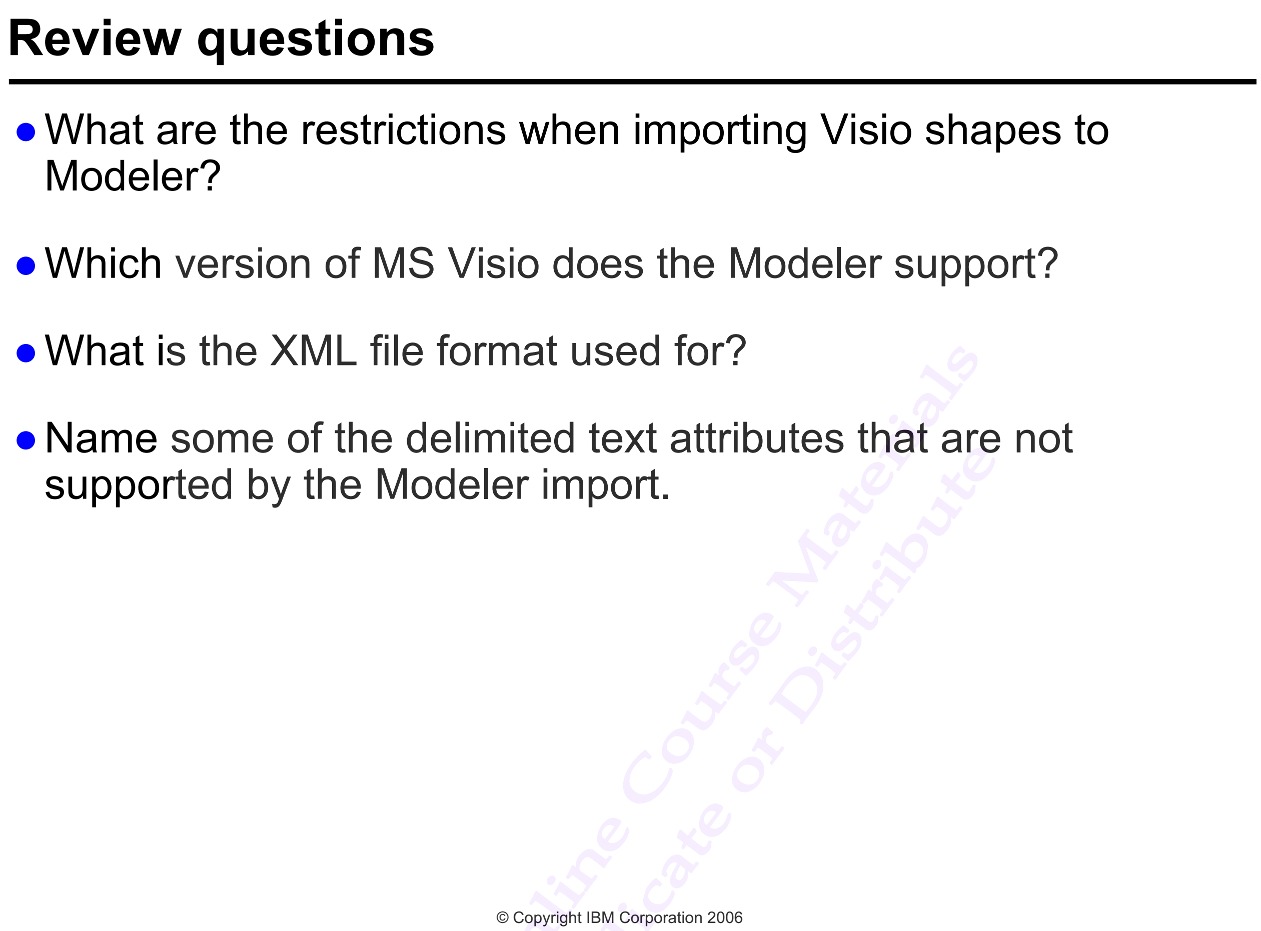


Exercise

- Importing a model from Microsoft Visio
- Mapping unrecognized Visio objects to Modeler objects
- Updating model in Modeler to fix inconsistencies in the conversion of the Visio model
- Importing from delimited text file
- Updating model to fix inconsistencies in the import of the business items
- Importing from XML Schema Definition

Figure 12-26. Exercise VB1841.0

Notes:



Review questions

- What are the restrictions when importing Visio shapes to Modeler?
- Which version of MS Visio does the Modeler support?
- What is the XML file format used for?
- Name some of the delimited text attributes that are not supported by the Modeler import.

Figure 12-27. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 13.Help and troubleshooting

What this unit is about

This unit describes the help and troubleshooting in Modeler.

What you should be able to do

After completing this unit, you should be able to:

- Use the Modeler Help
- Download upgrades and fixes
- Contact software support
- Download Redbooks

Objectives

After completing this unit, you should be able to:

- Use the Modeler Help
- Download upgrades and fixes
- Contact software support
- Download Redbooks

Figuring out which way to go

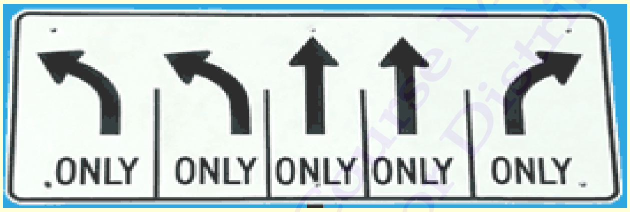


Figure 13-1. Objectives

VB1841.0

Notes:

Modeler Help

- **Help menu**
  - Welcome
    - Complete set of support topics: what’s new, tutorials, samples, hints and tips, product support, Web resources
  - Help contents
    - Eclipse help
  - Tips and tricks
    - Links to ideas and shortcuts to make modeling quicker and easier
  - Quickstart wizard
    - Another place to start a new project
  - Modeler Help
    - A place to search the help database by topic
  - Cheat sheets
    - Programmer help — Java, Eclipse
  - Software updates
    - Getting the latest product updates

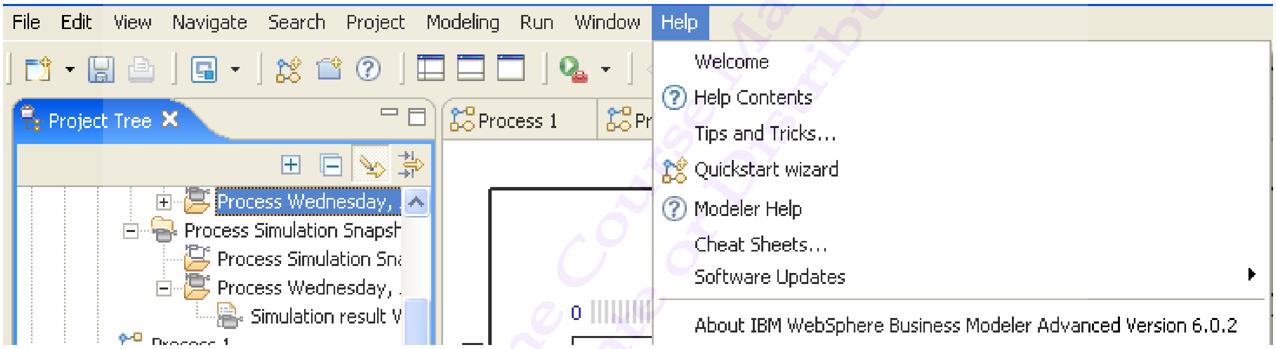
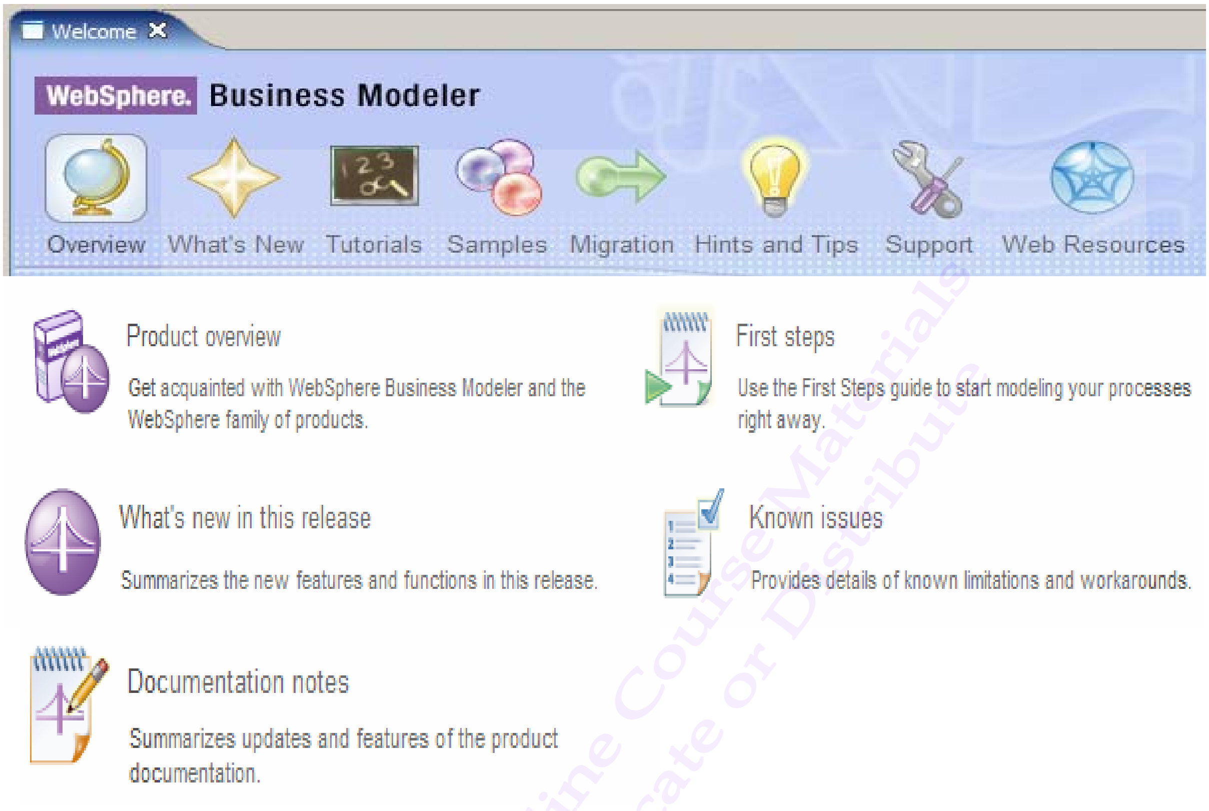


Figure 13-2. Modeler Help

VB1841.0

Notes:

Welcome page (1 of 3)



Product overview

Get acquainted with WebSphere Business Modeler and the WebSphere family of products.

First steps

Use the First Steps guide to start modeling your processes right away.

What's new in this release

Summarizes the new features and functions in this release.

Known issues

Provides details of known limitations and workarounds.

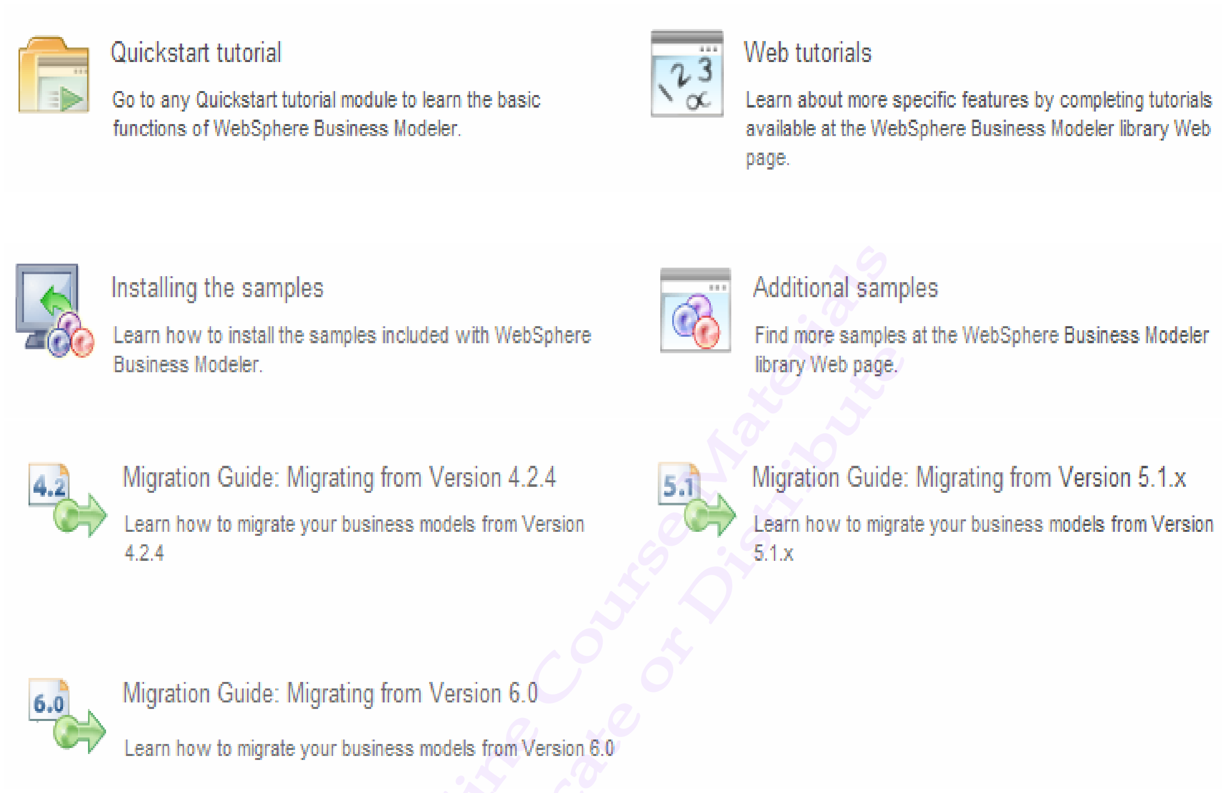
Documentation notes

Summarizes updates and features of the product documentation.

Figure 13-3. Welcome page (1 of 3) VB1841.0

Notes:

Welcome page (2 of 3)



Quickstart tutorial

Go to any Quickstart tutorial module to learn the basic functions of WebSphere Business Modeler.

Web tutorials

Learn about more specific features by completing tutorials available at the WebSphere Business Modeler library Web page.

Installing the samples

Learn how to install the samples included with WebSphere Business Modeler.

Additional samples

Find more samples at the WebSphere Business Modeler library Web page.

Migration Guide: Migrating from Version 4.2.4

Learn how to migrate your business models from Version 4.2.4

Migration Guide: Migrating from Version 5.1.x

Learn how to migrate your business models from Version 5.1.x

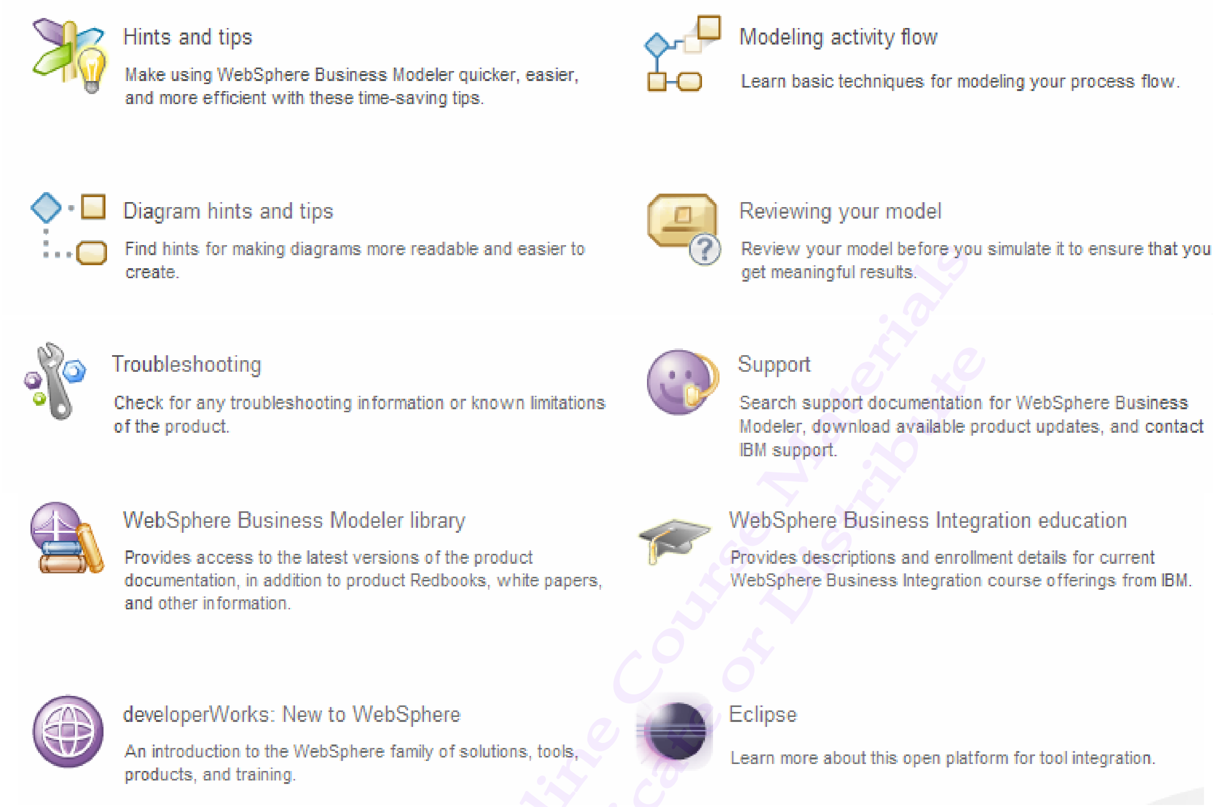
Migration Guide: Migrating from Version 6.0

Learn how to migrate your business models from Version 6.0

Figure 13-4. Welcome page (2 of 3) VB1841.0

Notes:

Welcome page (3 of 3)



Hints and tips

Make using WebSphere Business Modeler quicker, easier, and more efficient with these time-saving tips.

Modeling activity flow

Learn basic techniques for modeling your process flow.

Diagram hints and tips

Find hints for making diagrams more readable and easier to create.

Reviewing your model

Review your model before you simulate it to ensure that you get meaningful results.

Troubleshooting

Check for any troubleshooting information or known limitations of the product.

Support

Search support documentation for WebSphere Business Modeler, download available product updates, and contact IBM support.

WebSphere Business Modeler library

Provides access to the latest versions of the product documentation, in addition to product Redbooks, white papers, and other information.

WebSphere Business Integration education

Provides descriptions and enrollment details for current WebSphere Business Integration course offerings from IBM.

developerWorks: New to WebSphere

An introduction to the WebSphere family of solutions, tools, products, and training.

Eclipse

Learn more about this open platform for tool integration.

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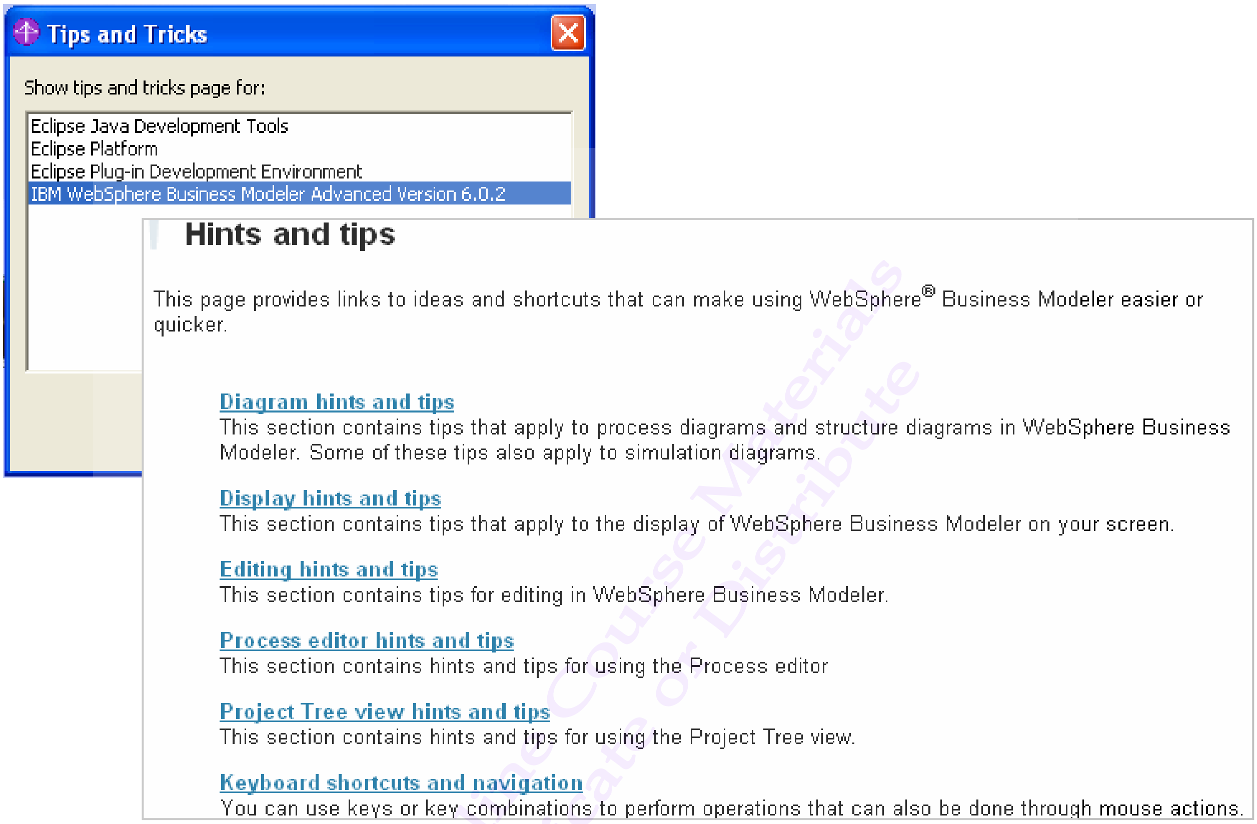
Figure 13-5. Welcome page (3 of 3) VB1841.0

Notes:

Tips and tricks



Show tips and tricks page for:

- Eclipse Java Development Tools
- Eclipse Platform
- Eclipse Plug-in Development Environment
- IBM WebSphere Business Modeler Advanced Version 6.0.2

Hints and tips

This page provides links to ideas and shortcuts that can make using WebSphere® Business Modeler easier or quicker.

Diagram hints and tips
This section contains tips that apply to process diagrams and structure diagrams in WebSphere Business Modeler. Some of these tips also apply to simulation diagrams.

Display hints and tips
This section contains tips that apply to the display of WebSphere Business Modeler on your screen.

Editing hints and tips
This section contains tips for editing in WebSphere Business Modeler.

Process editor hints and tips
This section contains hints and tips for using the Process editor

Project Tree view hints and tips
This section contains hints and tips for using the Project Tree view.

Keyboard shortcuts and navigation
You can use keys or key combinations to perform operations that can also be done through mouse actions.

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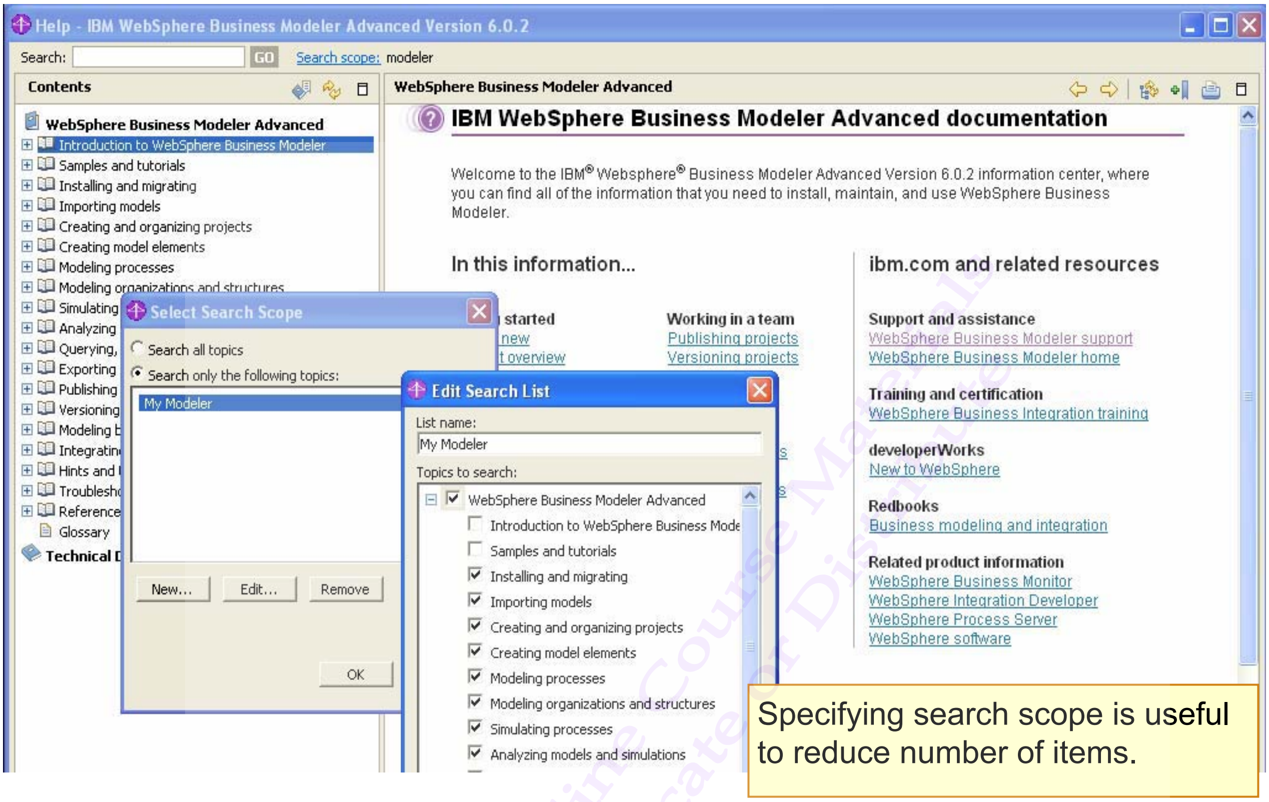
Figure 13-6. Tips and tricks VB1841.0

Notes:

Modeler Help — search scope and Web links


Help - IBM WebSphere Business Modeler Advanced Version 6.0.2
Search:
GO
Contents
WebSphere Business Modeler Advanced
Introduction to WebSphere Business Modeler
Samples and tutorials
Installing and migrating
Importing models
Creating and organizing projects
Creating model elements
Modeling processes
Modeling organizations and structures
Simulating
Analyzing
Querying,
Exporting
Publishing
Versioning
Modeling b
Integratin
Hints and
Troublesho
Reference
Glossary
Technical D
Select Search Scope
New...
Edit...
Remove
OK
Edit Search List
WebSphere Business Modeler Advanced
In this information...
started
new
t overview
Working in a team
Publishing projects
Versioning projects
ibm.com and related resources
Support and assistance
WebSphere Business Modeler support
WebSphere Business Modeler home
Training and certification
WebSphere Business Integration training
developerWorks
New to WebSphere
Redbooks
Business modeling and integration
Related product information
WebSphere Business Monitor
WebSphere Integration Developer
WebSphere Process Server
WebSphere software

Search scope: modeler

IBM WebSphere Business Modeler Advanced documentation

Welcome to the IBM® Websphere® Business Modeler Advanced Version 6.0.2 information center, where you can find all of the information that you need to install, maintain, and use WebSphere Business Modeler.

Select Search Scope

○ Search all topics

● Search only the following topics:

My Modeler

Edit Search List

List name: My Modeler

Topics to search:

- ☑ WebSphere Business Modeler Advanced
  - ☐ Introduction to WebSphere Business Mode
  - ☐ Samples and tutorials
  - ☑ Installing and migrating
  - ☑ Importing models
  - ☑ Creating and organizing projects
  - ☑ Creating model elements
  - ☑ Modeling processes
  - ☑ Modeling organizations and structures
  - ☑ Simulating processes
  - ☑ Analyzing models and simulations

Specifying search scope is useful to reduce number of items.

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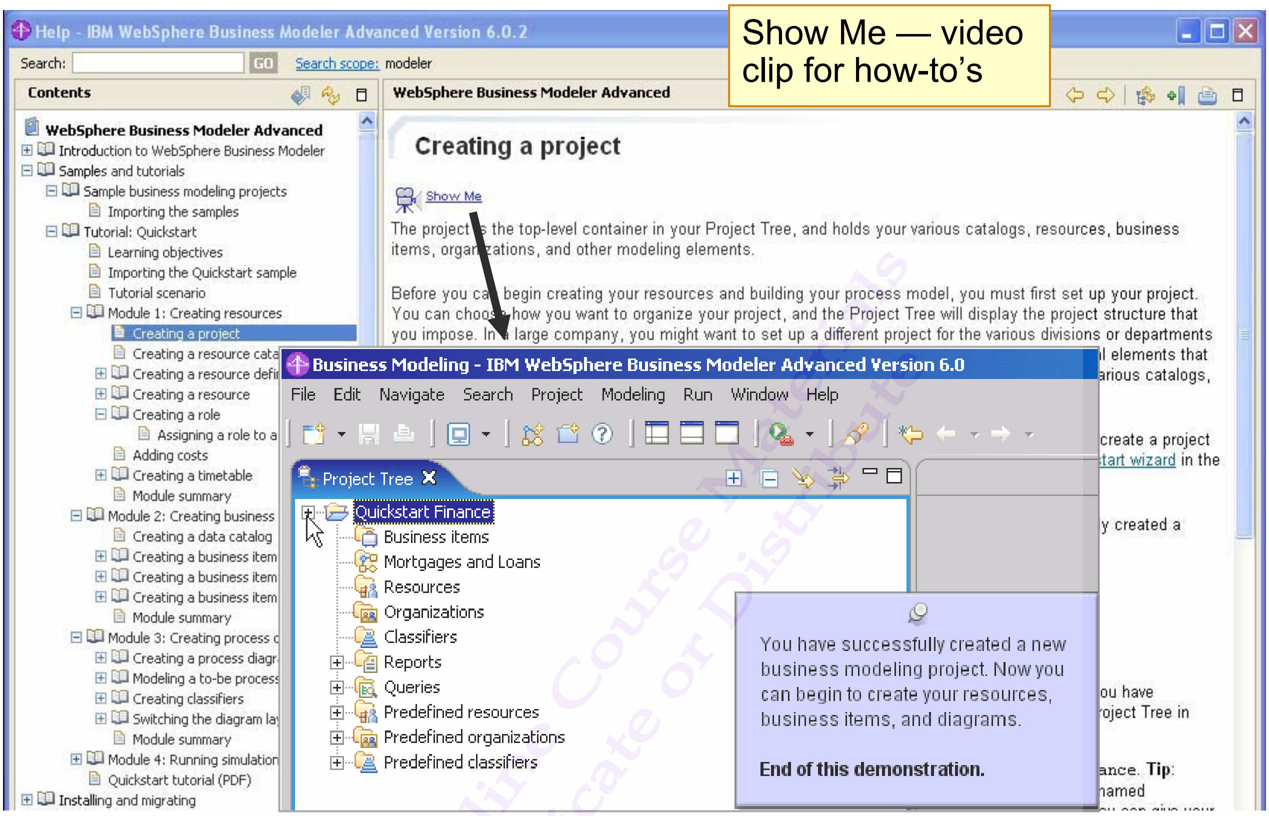
Figure 13-7. Modeler Help — search scope and Web links VB1841.0

Notes:

Modeler Help — tutorials



Show Me — video clip for how-to's

Creating a project

The project s the top-level container in your Project Tree, and holds your various catalogs, resources, business items, organ zations, and other modeling elements.

Before you ca begin creating your resources and building your process model, you must first set up your project. You can choo how you want to organize your project, and the Project Tree will display the project structure that you impose. In a large company, you might want to set up a different project for the various divisions or departments

You have successfully created a new business modeling project. Now you can begin to create your resources, business items, and diagrams.

End of this demonstration.

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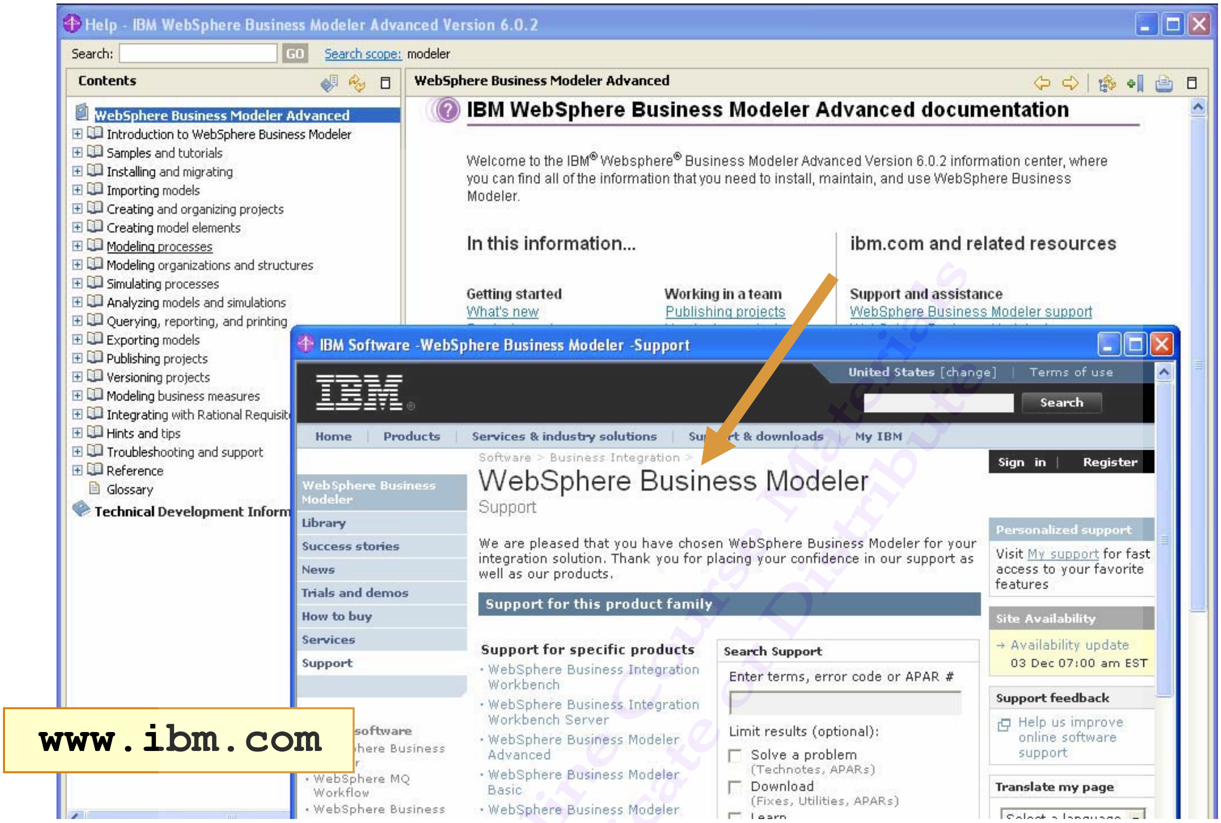
Figure 13-8. Modeler Help — tutorials VB1841.0

Notes:

Modeler Help — Web links


Help - IBM WebSphere Business Modeler Advanced Version 6.0.2
Search:
GO
Search scope: modeler
Contents
WebSphere Business Modeler Advanced
Introduction to WebSphere Business Modeler
Samples and tutorials
Installing and migrating
Importing models
Creating and organizing projects
Creating model elements
Modeling processes
Modeling organizations and structures
Simulating processes
Analyzing models and simulations
Querying, reporting, and printing
Exporting models
Publishing projects
Versioning projects
Modeling business measures
Integrating with Rational Requisit
Hints and tips
Troubleshooting and support
Reference
Glossary
Technical Development Inform
WebSphere Business Modeler Advanced
IBM WebSphere Business Modeler Advanced documentation
In this information...
ibm.com and related resources
Getting started
What's new
Working in a team
Publishing projects
Support and assistance
WebSphere Business Modeler support
IBM Software -WebSphere Business Modeler -Support
United States [change]
Terms of use
IBM
Search
Home
Products
Services & industry solutions
Support & downloads
My IBM
Sign in
Register
Software > Business Integration >
WebSphere Business Modeler
Support
WebSphere Business Modeler
Library
Success stories
News
Trials and demos
How to buy
Services
Support
Support for this product family
Support for specific products
WebSphere Business Integration Workbench
WebSphere Business Integration Workbench Server
WebSphere Business Modeler Advanced
WebSphere Business Modeler Basic
WebSphere Business Modeler
WebSphere MQ Workflow
WebSphere Business
Search Support
Enter terms, error code or APAR #
Limit results (optional):
☐ Solve a problem (Technotes, APARs)
☐ Download (Fixes, Utilities, APARs)
☐ Learn
Personalized support
Visit My support for fast access to your favorite features
Site Availability
→ Availability update 03 Dec 07:00 am EST
Support feedback
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Translate my page
Select a language
www.ibm.com

Welcome to the IBM® Websphere® Business Modeler Advanced Version 6.0.2 information center, where you can find all of the information that you need to install, maintain, and use WebSphere Business Modeler.

We are pleased that you have chosen WebSphere Business Modeler for your integration solution. Thank you for placing your confidence in our support as well as our products.

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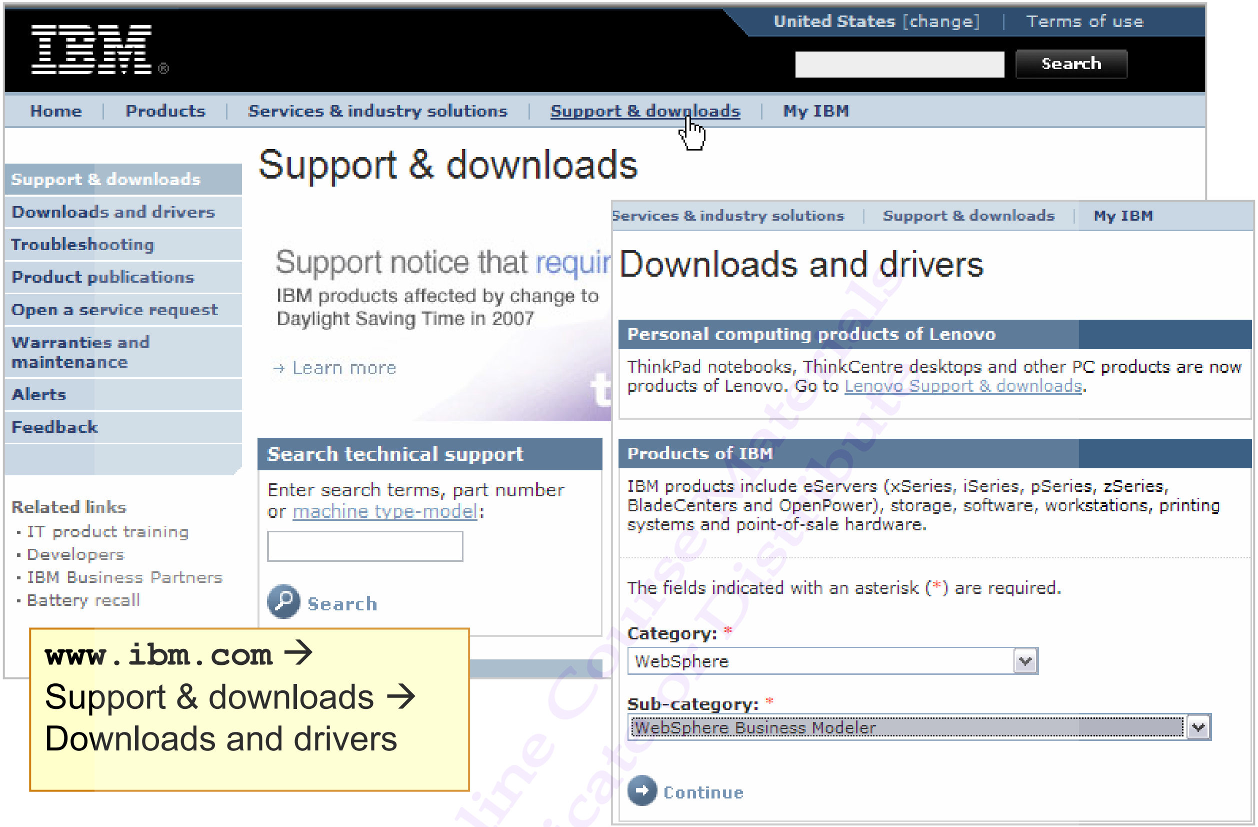
Figure 13-9. Modeler Help — Web links VB1841.0

Notes:

Download updates



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IBM products include eServers (xSeries, iSeries, pSeries, zSeries, BladeCenters and OpenPower), storage, software, workstations, printing systems and point-of-sale hardware.

The fields indicated with an asterisk (*) are required.

Category: * WebSphere

Sub-category: * WebSphere Business Modeler

`www.ibm.com` →
Support & downloads →
Downloads and drivers

Figure 13-10. Download updates VB1841.0

Notes:

Hover help

- Holding a cursor over an item will display associated information
  - Do not have to open elements see inputs or outputs
  - Do not have to open panes to see full names

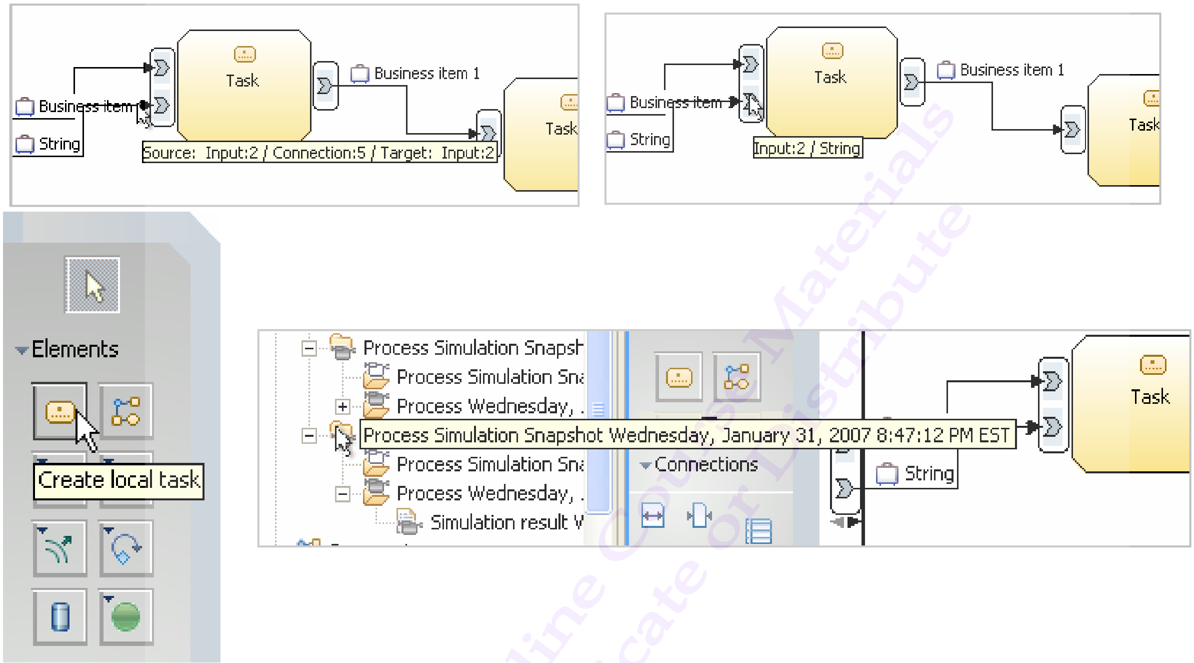

Figure 13-11. Hover help VB1841.0

Notes:

Redbooks

www.redbooks.ibm.com

- Best practices for using WebSphere Business Modeler and Monitor
- Business process management: Modeling through monitoring using WebSphere V6 products

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Figure 13-12. Redbooks

VB1841.0

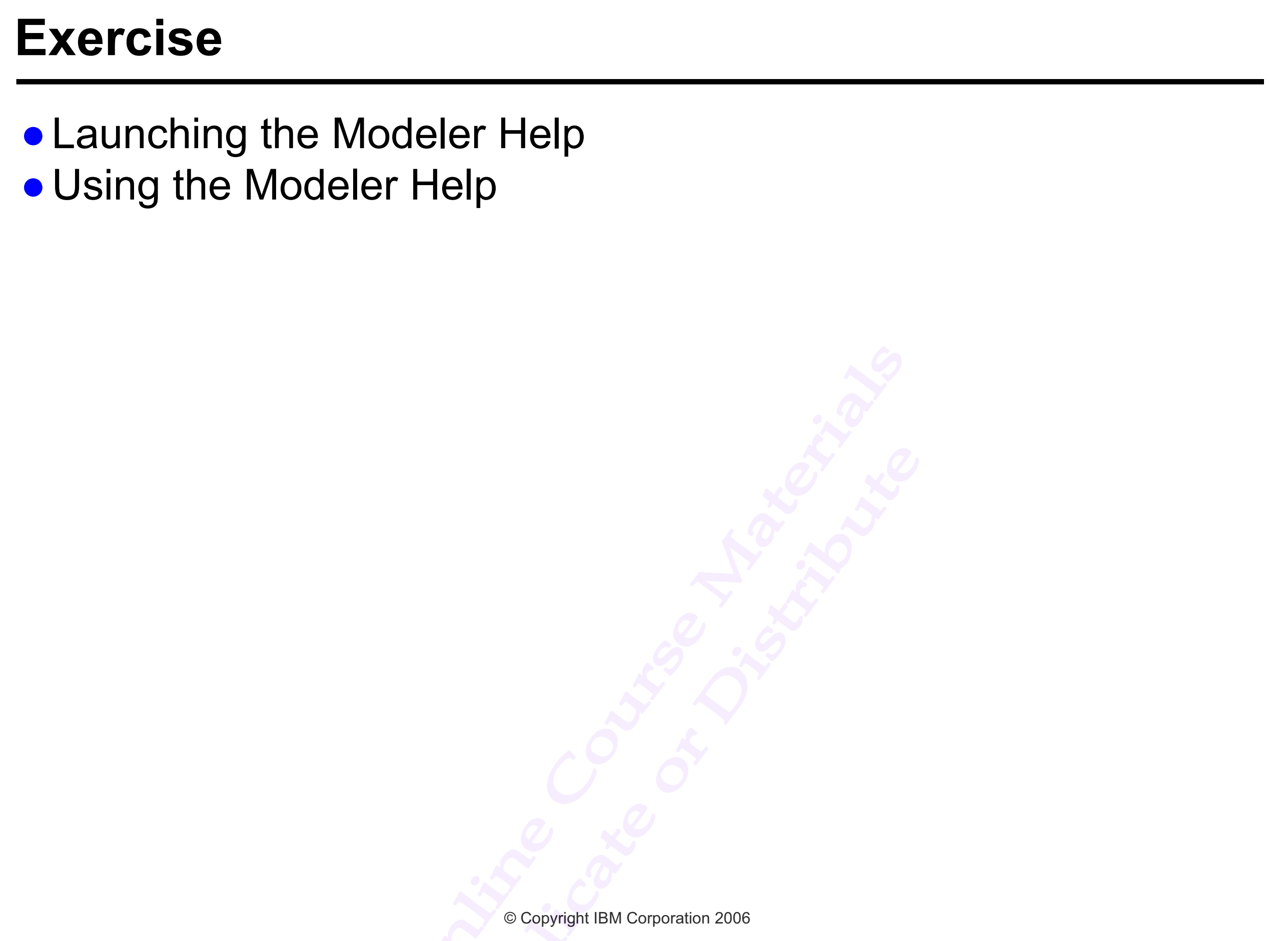
Notes:

Summary

- Modeler Help
- Welcome
- Upgrades and fixes
- Software support
- Redbooks

Figure 13-13. Summary VB1841.0

Notes:



Exercise

- Launching the Modeler Help
- Using the Modeler Help

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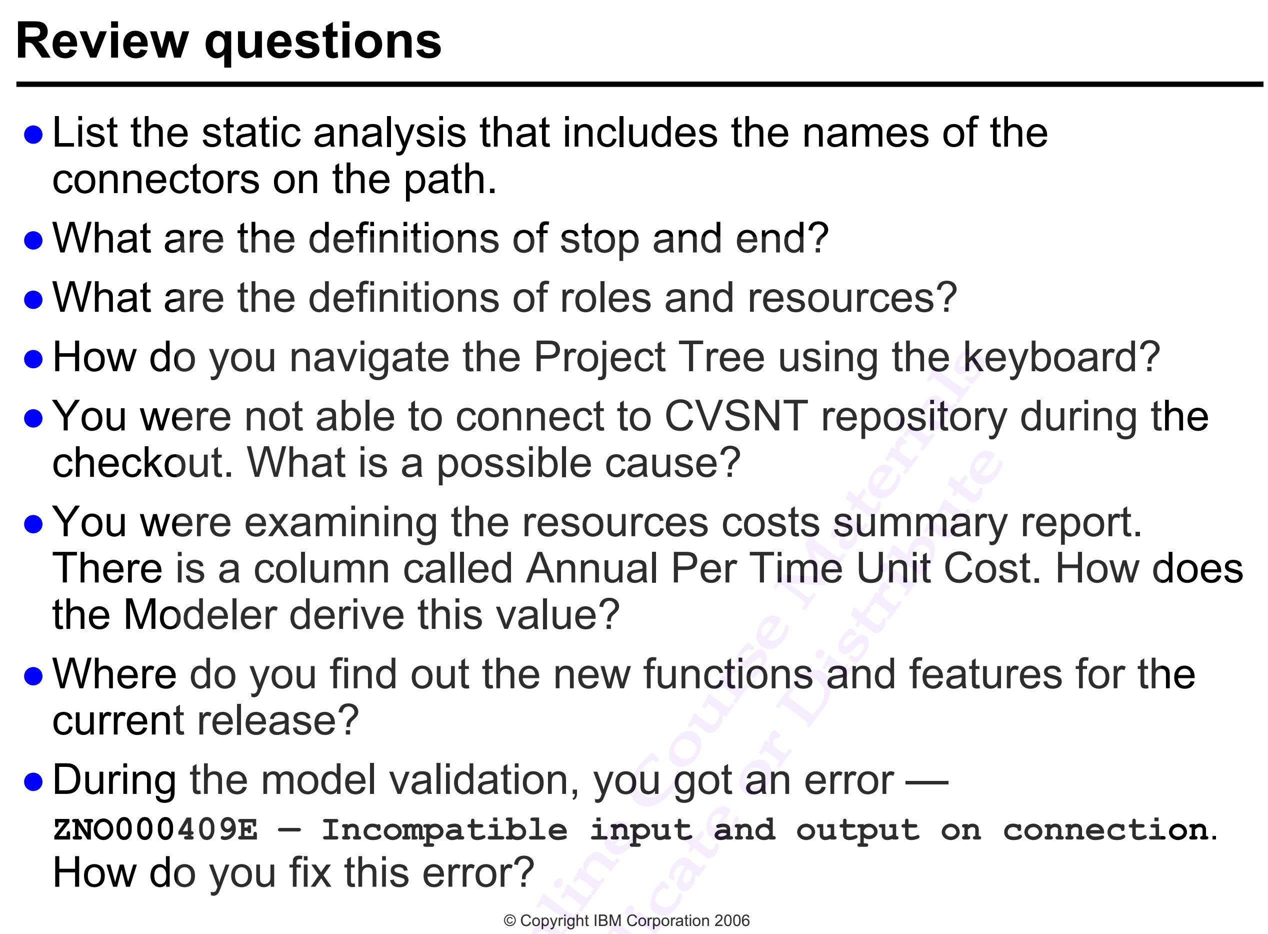
Figure 13-14. Exercise VB1841.0

Notes:



Review questions

- List the static analysis that includes the names of the connectors on the path.
- What are the definitions of stop and end?
- What are the definitions of roles and resources?
- How do you navigate the Project Tree using the keyboard?
- You were not able to connect to CVSNT repository during the checkout. What is a possible cause?
- You were examining the resources costs summary report. There is a column called Annual Per Time Unit Cost. How does the Modeler derive this value?
- Where do you find out the new functions and features for the current release?
- During the model validation, you got an error — **`ZNO000409E – Incompatible input and output on connection`**. How do you fix this error?

Figure 13-15. Review questions VB1841.0

Notes:

The solution can be found in the appendix of the Student Exercises.

Unit 14.Summary of process mapping and analysis

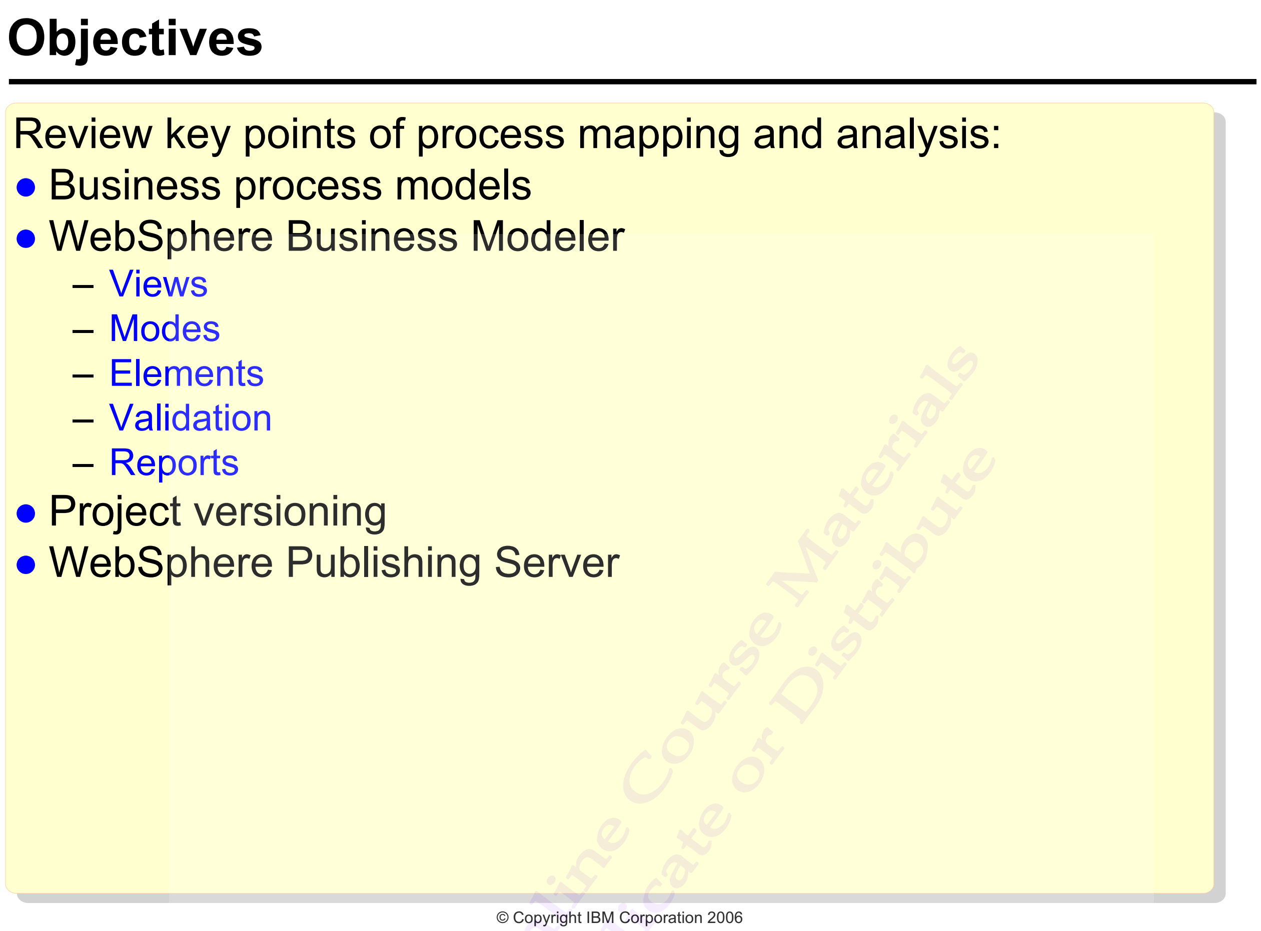
What this unit is about

This unit reviews the process mapping and analysis.

What you should be able to do

After completing this unit, you should be able to:

- Review key points in course:
  - Business process models
  - WebSphere Business Modeler
  - Views
  - Modes
  - Elements
  - Validation
  - Reports
  - Project versioning
  - WebSphere Publishing Server



Objectives

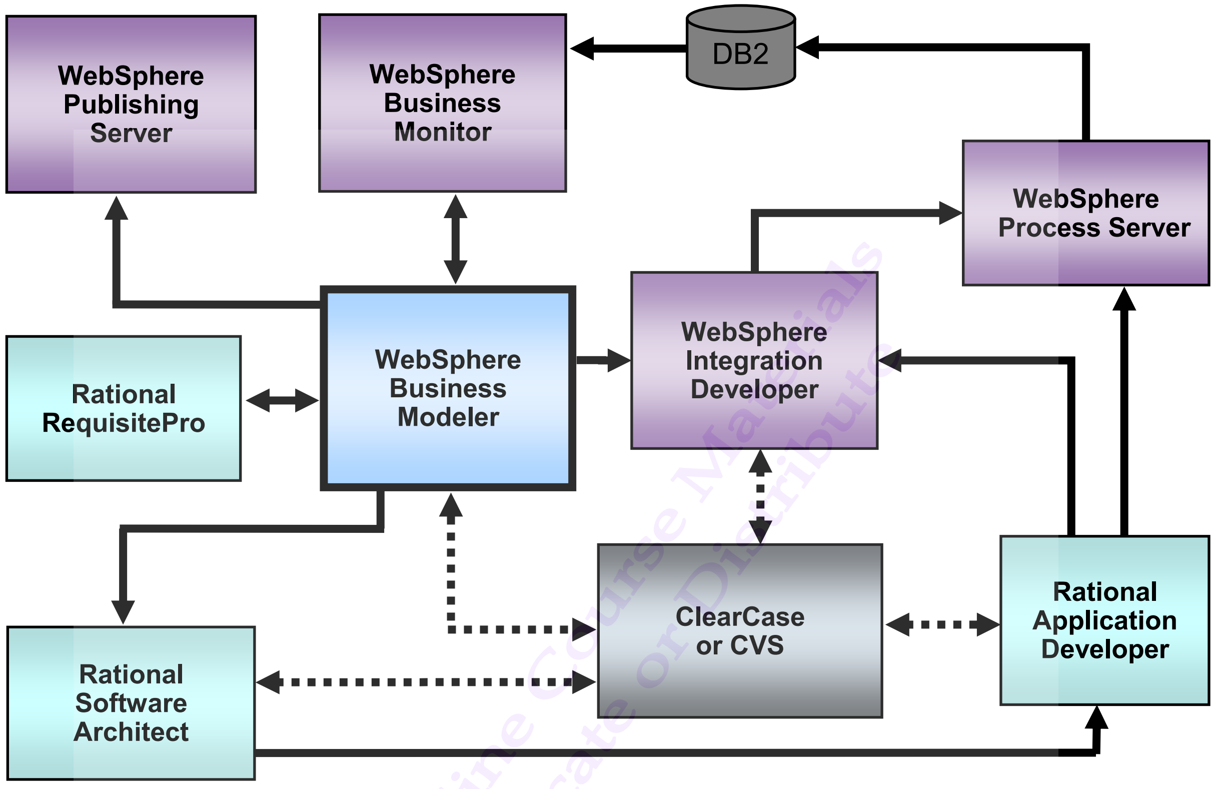
Review key points of process mapping and analysis:

- Business process models
- WebSphere Business Modeler
  - Views
  - Modes
  - Elements
  - Validation
  - Reports
- Project versioning
- WebSphere Publishing Server

Figure 14-1. Objectives VB1841.0

Notes:

Products covered in this course



WebSphere Publishing Server
WebSphere Business Monitor
DB2
WebSphere Process Server
WebSphere Business Modeler
WebSphere Integration Developer
Rational RequisitePro
ClearCase or CVS
Rational Application Developer
Rational Software Architect

Figure 14-2. Products covered in this course VB1841.0

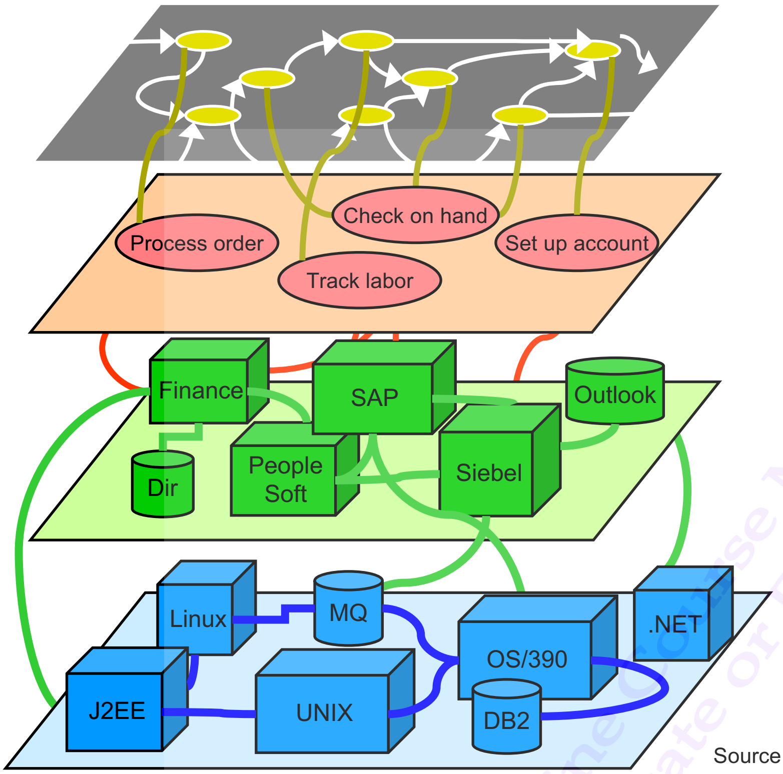
Notes:

Legend:

- - - - - - Version control flow (dashed line)

——— Development flow (solid line)

The relationship between the process and technology



Business process layer

- Cross functional end-to-end sales order process

Service layer

- Used to connect sales to customer, for example

Application layer

- Applications, components, software

Technology layer

- Hardware, network
- Connect J2EE to .NET

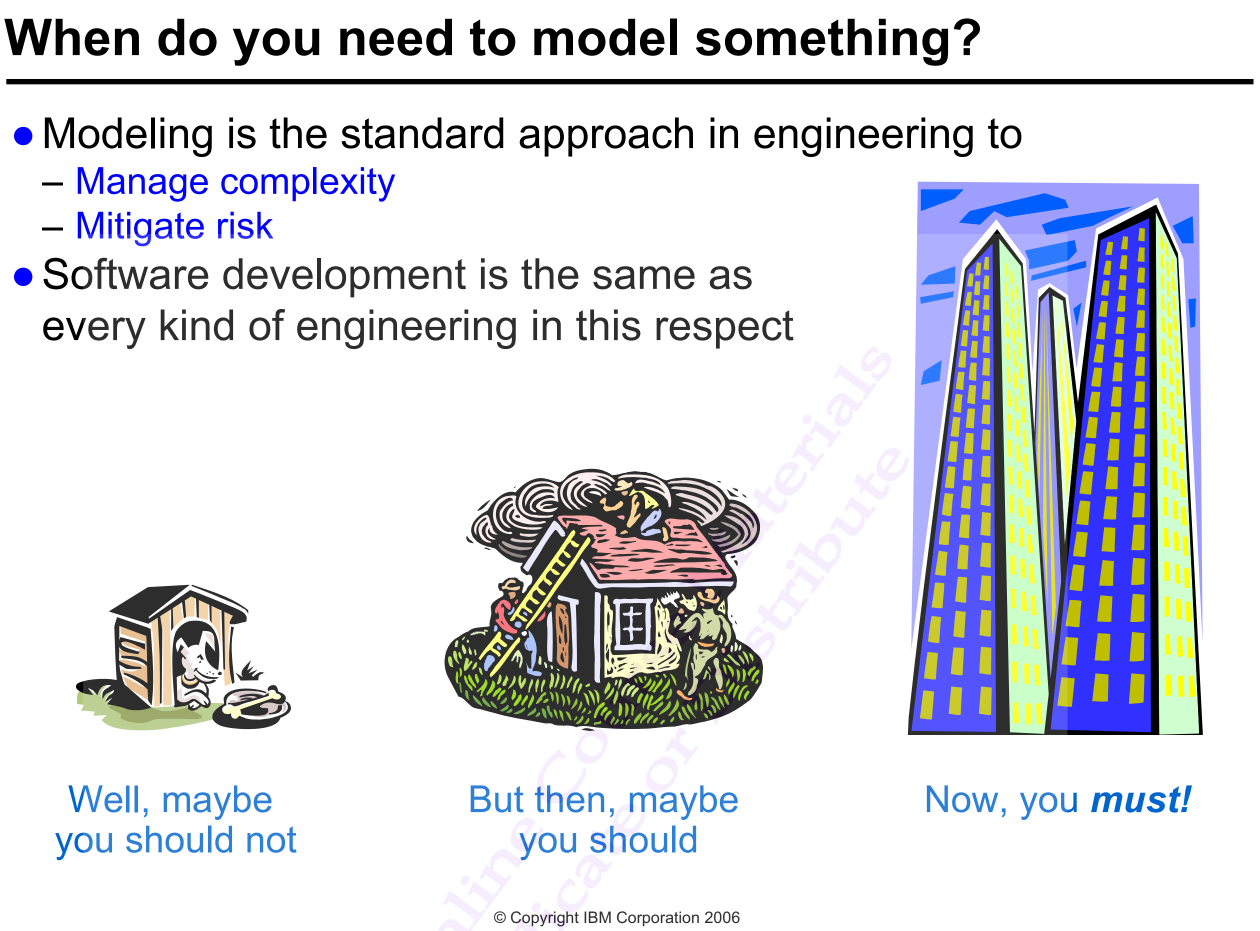
Source: CBDi Forum, `http://www.cbdiforum.com`

Figure 14-3. The relationship between the process and technology VB1841.0

Notes:

CBD: component-based development

This relationship of business components and services as supported by IT can be best depicted as layers, each adding a level of definition needed to support the business processes where people accomplish the tasks necessary to deliver value to a customer. For the business analyst, the new service layer provides a good interface between the business process and all of the technology needed to support the business.



When do you need to model something?

- Modeling is the standard approach in engineering to
  - Manage complexity
  - Mitigate risk
- Software development is the same as every kind of engineering in this respect

Well, maybe you should not

But then, maybe you should

Now, you ***must!***

Figure 14-4. When do you need to model something? VB1841.0

Notes:

Modeling lets you manage complexity and risk.

- Not all projects require models in order to be successful.
- The more complex a project, the more it needs models.
- Software is no different from every other kind of engineering, in this respect.

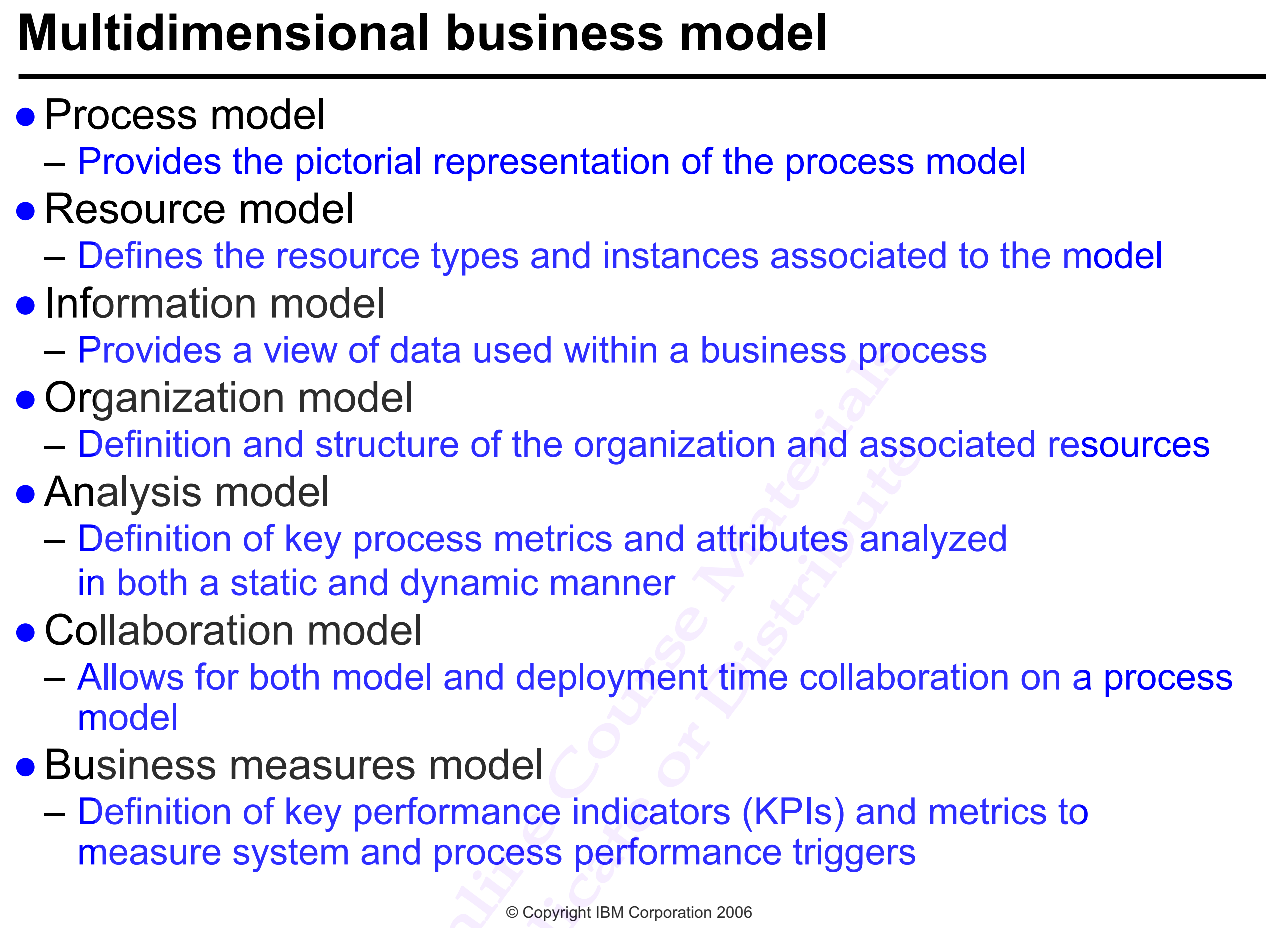
Why model business processes?

- Business process models serve many purposes, including:
  - Documenting existing procedures
  - Determining requirements for staff, systems, and facilities
  - Planning changes to existing processes and systems
  - Testing and analyzing existing and proposed processes
  - Identifying defects in your processes (bottlenecks, and so forth)
  - Process model data can support other business applications that rely on this information
    - Workflow, policy and procedure documentation, application development
- Visually represents an organization’s flow of work currently and allows “what if?” for future designs
  - To understand what it takes to complete the activities
- Effective models need a well designed modeling structure
  - Ensures consistent and complete representation of information

Figure 14-5. Why model business processes? VB1841.0

Notes:

Why the process layer — communication of all parties, both business and technology, a solid foundation for the future responsiveness of the enterprise to change. Today’s software systems are no longer simple like the dog house; they are more complicated like the skyscraper. It is very difficult to understand them without a model. They are also very expensive to implement; therefore it is important to understand the outcome before you start to build them.



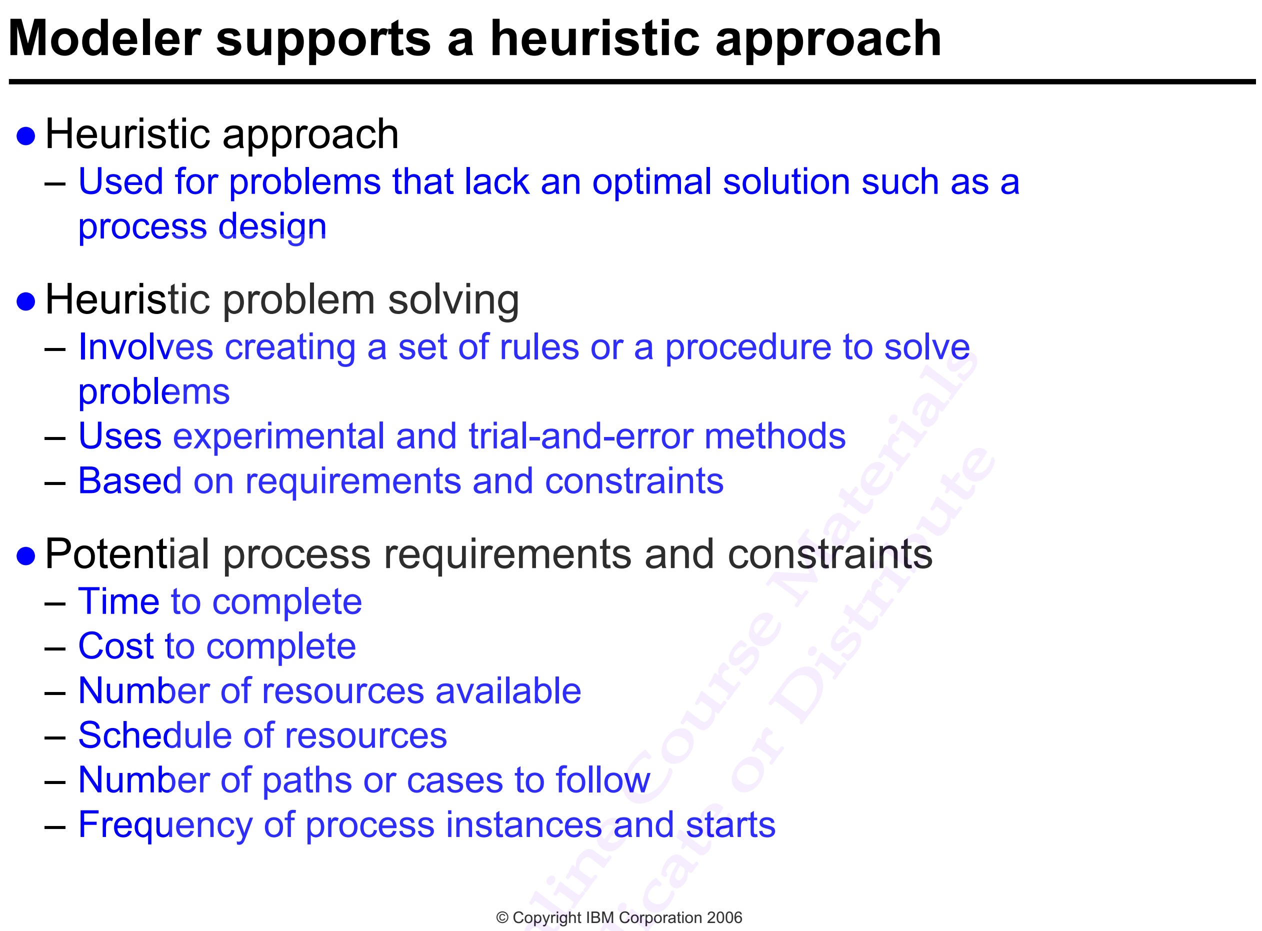
Multidimensional business model

- Process model
  - Provides the pictorial representation of the process model
- Resource model
  - Defines the resource types and instances associated to the model
- Information model
  - Provides a view of data used within a business process
- Organization model
  - Definition and structure of the organization and associated resources
- Analysis model
  - Definition of key process metrics and attributes analyzed in both a static and dynamic manner
- Collaboration model
  - Allows for both model and deployment time collaboration on a process model
- Business measures model
  - Definition of key performance indicators (KPIs) and metrics to measure system and process performance triggers

Figure 14-6. Multidimensional business model VB1841.0

Notes:

Unlike one big drawing of a business process, the modeler uses several different models to represent the different aspects of a business process. Working together, the different models provide a complete representation of the business process.



Modeler supports a heuristic approach

- Heuristic approach
  - Used for problems that lack an optimal solution such as a process design
- Heuristic problem solving
  - Involves creating a set of rules or a procedure to solve problems
  - Uses experimental and trial-and-error methods
  - Based on requirements and constraints
- Potential process requirements and constraints
  - Time to complete
  - Cost to complete
  - Number of resources available
  - Schedule of resources
  - Number of paths or cases to follow
  - Frequency of process instances and starts

Figure 14-7. Modeler supports a heuristic approach VB1841.0

Notes:

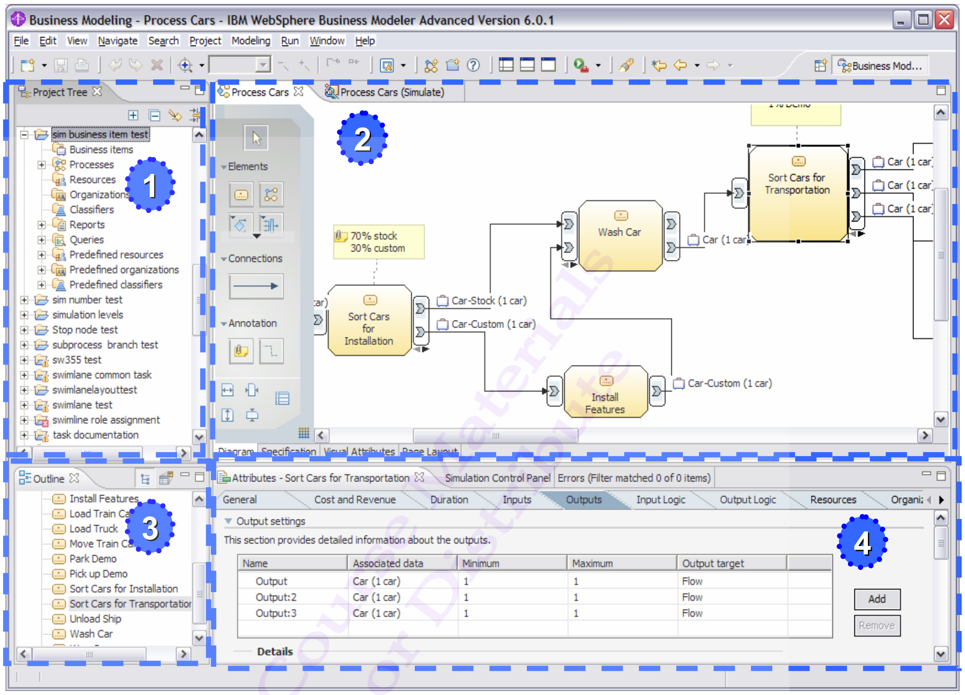
The four-pane view is the default modeler desktop

1 Project Tree view
- Shows all the elements available to be used in the model, plus:
  - Resources
  - Organizations

2 Process Editor view
- The area where models are created
- Other editors open in the same pane

3 Outline view
- Index to elements on the process model

4 Attribute view
- All of the details associated with the element selected on the diagram
- This pane is also used to display analysis results



This section provides detailed information about the outputs.

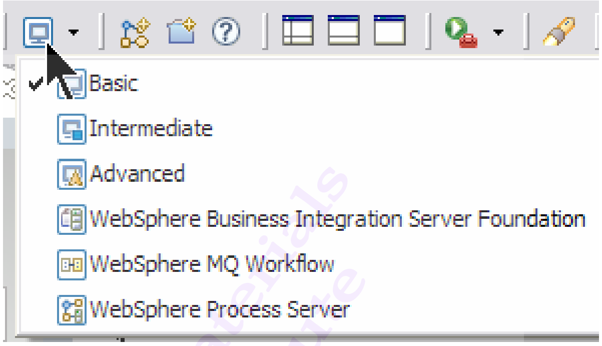
Name	Associated data	Minimum	Maximum	Output target
Output	Car (1 car)	1	1	Flow
Output:2	Car (1 car)	1	1	Flow
Output:3	Car (1 car)	1	1	Flow

Figure 14-8. The four-pane view is the default modeler desktop VB1841.0

Notes:

Six modeling modes

- Three modes for creating process modeling:
  - Basic business modeling
  - Intermediate business modeling
  - Advanced business modeling
- Three modes for applying validation rules:
  - WebSphere Business Integration Server
  - WebSphere MQ Workflow
  - WebSphere Process Server



- Switching from basic to more advanced modes, the following changes occur:
  - Some options become disabled.
  - Some notational elements become disabled.
  - A previously valid model may no longer be valid because the new mode has additional validation rules.
- No information is lost when you switch modes.

Figure 14-9. Six modeling modes VB1841.0

Notes:

Primary elements used in modeling

- **Task** — Lowest level of work that can be displayed on a diagram
- **Process** — Units of work that are performed in a sequence
- **Service** — Process that is external to the organization
- **Repository** — Place to store business items
- **Simple decision** — Routes inputs to one of two paths
- **Multiple-choice decision** — Routes inputs to one several paths
- **Merge** — Combines two or more paths after an exclusive decision
- **Fork** — Splits path into two or more parallel paths
- **Join** — Combines two or more parallel paths
- **Start** — The beginning of a process not started by another process
- **Stop** — Marks the end of a process, required
- **End** — Marks the end of a path that is not the end of the process
- **Connection** — Link between two elements that represents the flow

Figure 14-10. Primary elements used in modeling VB1841.0

Notes:

Adding relevant information

- A model includes a map with relevant information added.
- Information on what is received, worked on, and produced:
  - Business items
- Information about who performs the work and when:
  - Resources
  - Roles
  - Timetables
- Information on how the company is organized:
  - Organization unit
  - Location
  - Structure
- Information on grouping related information for analysis:
  - Classifiers

Figure 14-11. Adding relevant information VB1841.0

Notes:

Additional elements

- Making a model more realistic
  - Timer
    - Initiates a flow at a specified point in time
  - Map
    - Transforms data from one structure to another
  - Broadcaster
    - Publishes a notification
  - Receiver
    - Listens for notifications
  - Observer
    - Watches a repository

Figure 14-12. Additional elements VB1841.0

Notes:

Validation fundamentals

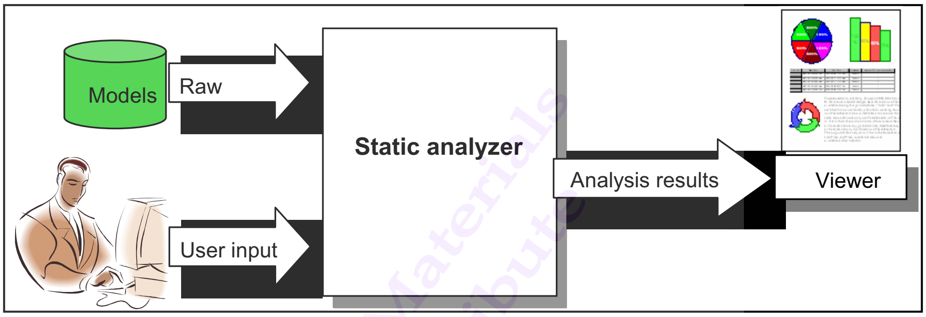
- Syntax: Model constructs are correct and valid.
  - Is the model properly constructed to provide valid results in the Modeler?
- Semantics: The meaning of the model is correct — task attributes, organizations, roles, and sequence of tasks.
  - Does the model created reflect what is occurring in the business, or what could occur in the business?
  - Is it thorough; was any data left out?
- Sense: The model is business relevant, cost (time and money) assumptions and their causes are valid.
  - Does it make sense that the model and resulting analysis show on average that it takes three weeks to process a claim when company metrics would suggest one week?
- Standards: The model adheres to the defined modeling standards — constructs and naming conventions.
  - Will the model be able to be understood by someone who was not involved with its creation?

Figure 14-13. Validation fundamentals VB1841.0

Notes:

Static analysis overview

- Gives business users important information computed from the raw data in the models:
  - Cost
  - Time
  - Performance
  - Improvement capabilities
  - Process flow validity
  - Resources leveling
  - Qualified resources to play important roles



- Inputs are raw model data and parameters entered by the user.
- Results are viewed using either a tabular or graphical viewer.
  - Results can be printed using predefined report templates.

Figure 14-14. Static analysis overview VB1841.0

Notes:

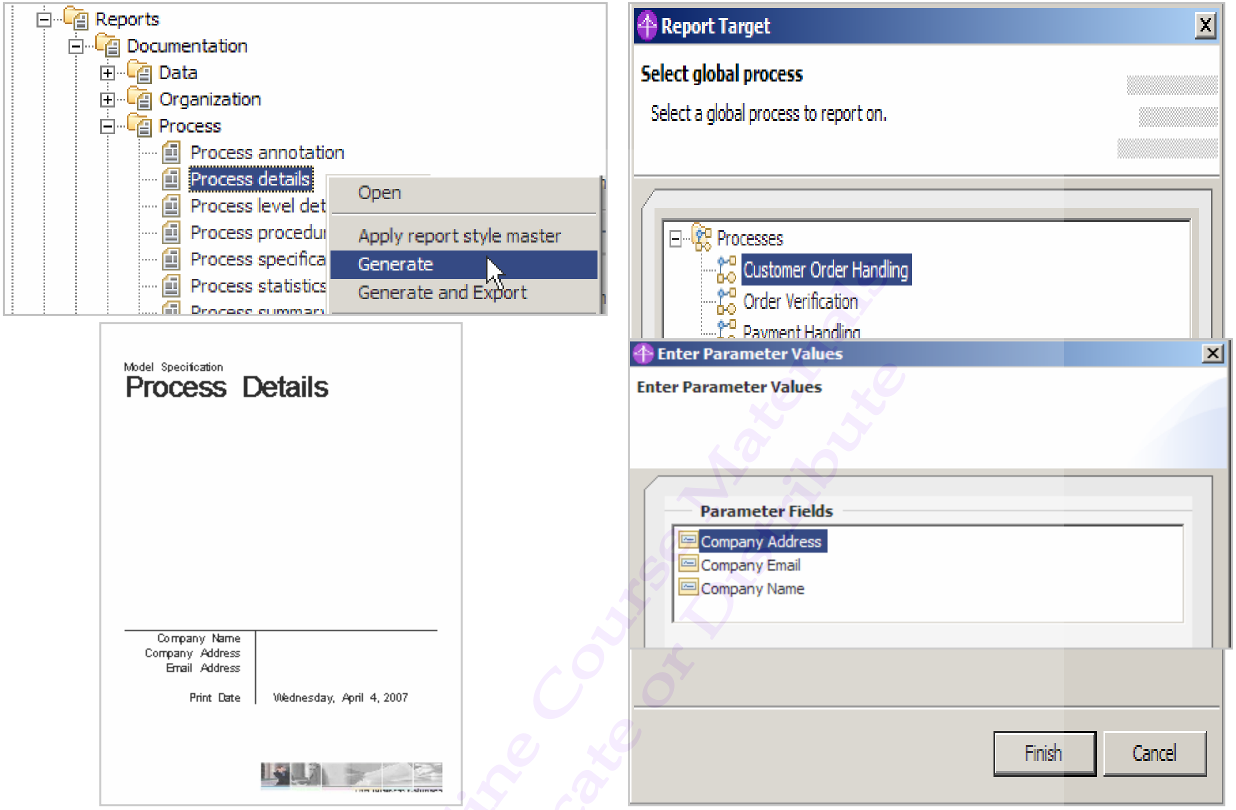
Query overview

- Extract and view information on elements of the models
- Return information about model elements of one specified type
- To confirm the content of the models
- The basis for creating reports
- Use the query builder to create queries
- A variety of documentation queries are available:
  - Statistics queries
    - Return the number of elements associated with the selected model element
  - Details queries
    - Return element names, such as resources, roles, organization units, locations, and business items, that are associated with the selected element
  - Specification queries
    - Return the values contained in the specification of the selected element

Figure 14-15. Query overview

Notes:

Generating reports



Model Specification

Process Details

Company Name
Company Address
Email Address

Print Date | Wednesday, April 4, 2007

Select global process

Select a global process to report on.

Enter Parameter Values

Figure 14-16. Generating reports VB1841.0

Notes:

Defining standards and agreeing to best practices

- Your stakeholders will also help you define the standards and gain the agreement required to maintain best practices:
  - WebSphere Business Modeler is methodology independent, but successful modeling efforts require a level of standardization and a defined approach.
  - Process modeling standards:
    - It is necessary to define the use, creation, and implementation of the symbols, definitions, and data descriptions.

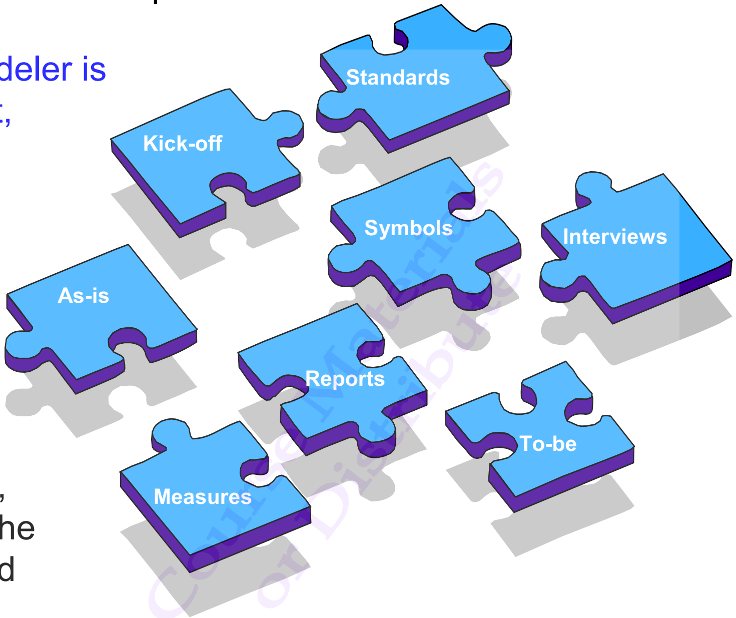
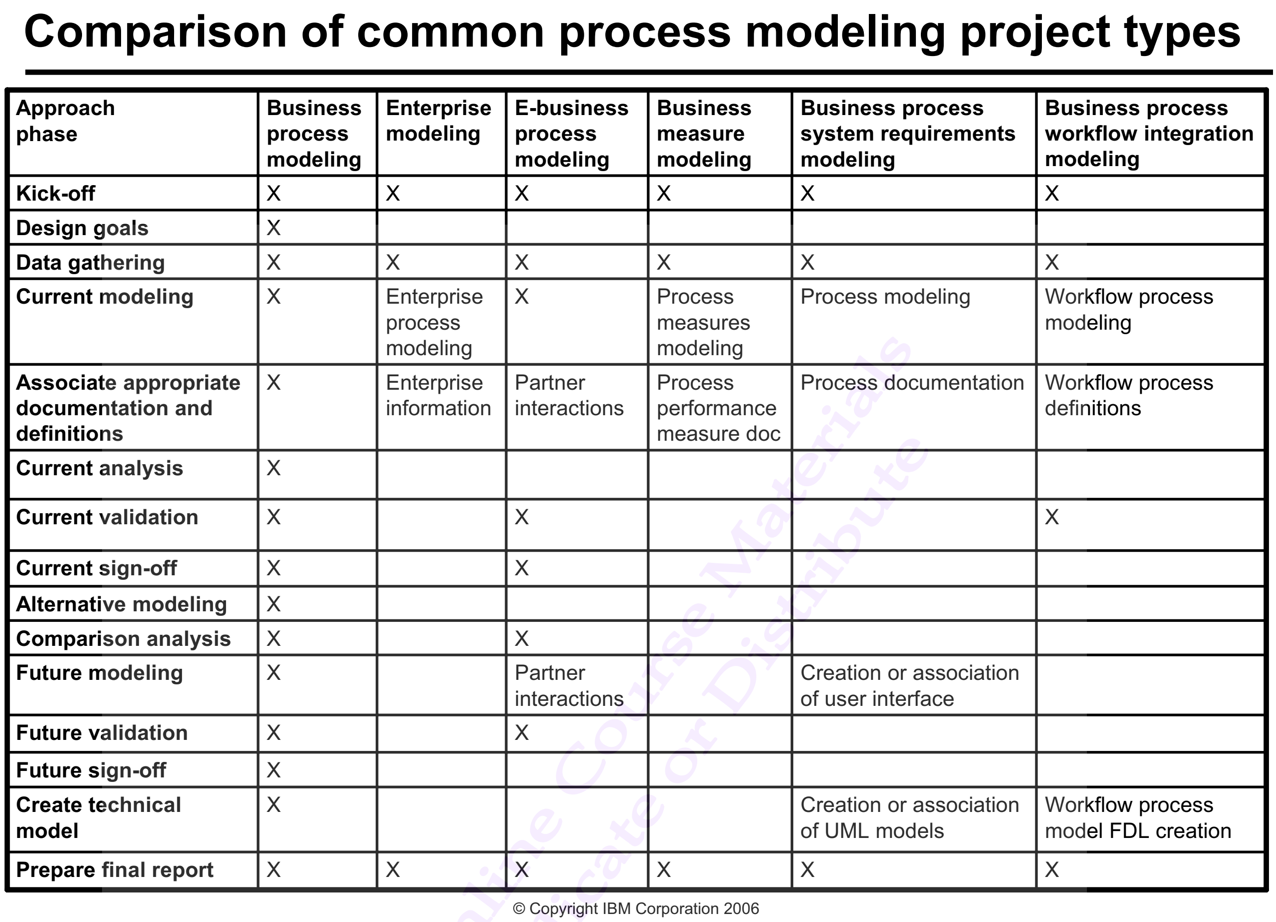


Figure 14-17. Defining standards and agreeing to best practices VB1841.0

Notes:



Comparison of common process modeling project types

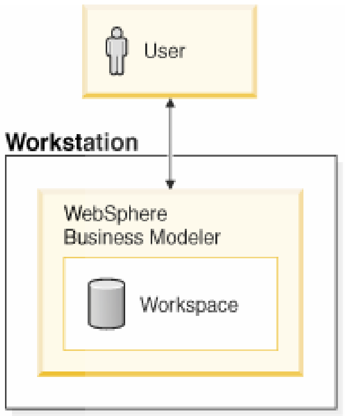
Approach phase	Business process modeling	Enterprise modeling	E-business process modeling	Business measure modeling	Business process system requirements modeling	Business process workflow integration modeling
Kick-off	X	X	X	X	X	X
Design goals	X					
Data gathering	X	X	X	X	X	X
Current modeling	X	Enterprise process modeling	X	Process measures modeling	Process modeling	Workflow process modeling
Associate appropriate documentation and definitions	X	Enterprise information	Partner interactions	Process performance measure doc	Process documentation	Workflow process definitions
Current analysis	X					
Current validation	X		X			X
Current sign-off	X		X			
Alternative modeling	X					
Comparison analysis	X		X			
Future modeling	X		Partner interactions		Creation or association of user interface	
Future validation	X		X			
Future sign-off	X					
Create technical model	X				Creation or association of UML models	Workflow process model FDL creation
Prepare final report	X	X	X	X	X	X

Figure 14-18. Comparison of common process modeling project types VB1841.0

Notes:

Environments for modeling

- Single user environment
- Multi-user environment



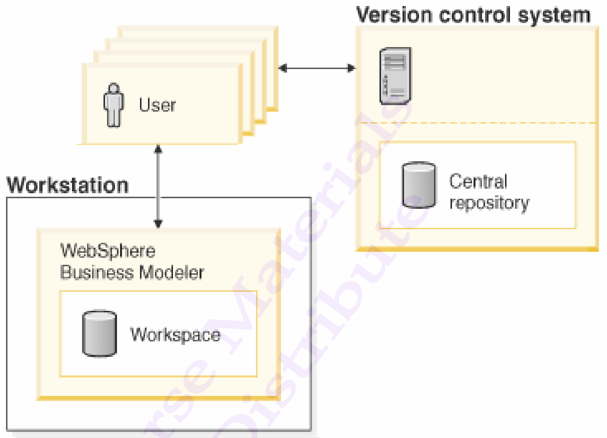


Figure 14-19. Environments for modeling VB1841.0

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Notes:

The **single user environment** is the basic environment for authoring a model. In this environment, a single user at a time builds, stores, validates, and analyzes the model. The single user environment is ideal for small scale projects in which parallel (or concurrent) development of the model does not often occur.

The **multiuser environment** supports larger projects with several users contributing to build the business process model.

Parallel development occurs when two or more users work on the model simultaneously. The danger with parallel development in the single user environment is that data loss may occur. For example, User A edits Process 1 to add Task 1, while User B edits Process 1 and adds Task 2. In this case, Process 1 will contain Task 1 or Task 2, depending on which user did the last save.

If more than one person needs to work on the model in the single user environment, they do so by exporting and importing model projects or individual model elements. For example, User A edits the model and then exports it. User B imports the model and then works on it. If the team is using importing and exporting models to share a project, the team members must closely cooperate and coordinate to avoid overwriting each other's changes and causing data loss.

Need for project versioning

- To distribute the effort of modeling or modifying an entire project among multiple team members.
  - Members can view and post project artifacts to a version control system.
  - Check out processes and create their local versions.
    - Submit their changes back when done
- Modeler can use IBM ClearCase or Concurrent Versions System (CVS) to access a version control repository on a server.
  - Maintain secured version control of project data in the repository
  - Each modification of a project element (such as process, resource, or catalog) stored as a distinct version of the original item
  - Post business modeling projects to share, view, make copies of the shared projects, and save the copies to their local machine
  - View the history of project element modifications
  - Compare two or more versions of the same item

Figure 14-20. Need for project versioning VB1841.0

Notes:

Publishing Server

- Users may include business analysts, consultants, or process engineers.
- Reviewers may include executives, consultants, employees, partners, and even customers.
- Reviewers validate the data used to create the process model or provide feedback.
- Users make adjustments to the process based on reviewer feedback.
- Publish a single model element, a complete catalog, or the entire process model project.
- The reviewers can then comment on the updated process model or respond to comments.
- This creates an environment for continuous improvement of the process model.

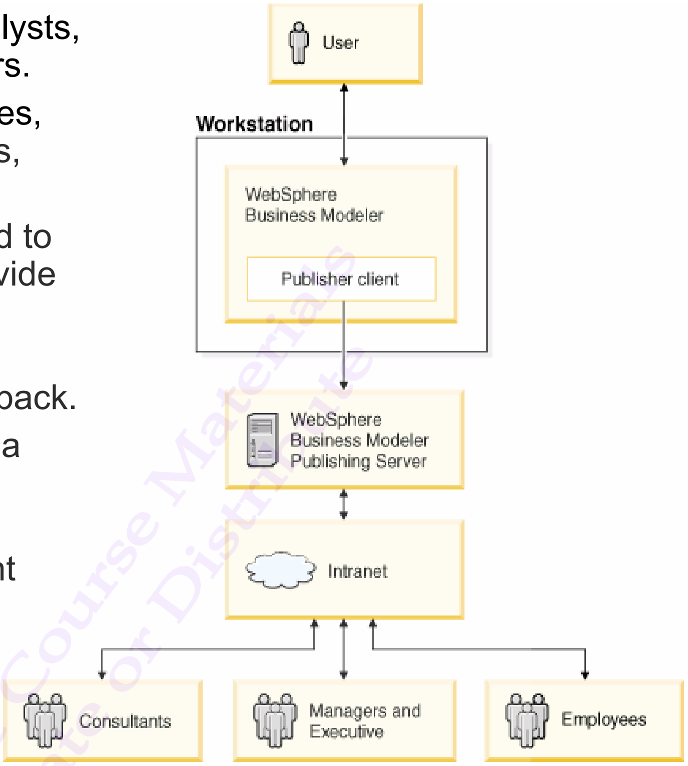

Figure 14-21. Publishing Server VB1841.0

Notes:

Modeler Help

- **Help menu**
  - Welcome
    - Complete set of support topics: what's new, tutorials, samples, hints and tips, product support, Web resources
  - Help contents
    - Eclipse help
  - Tips and tricks
    - Links to ideas and shortcuts to make modeling quicker and easier
  - Quickstart wizard
    - Another place to start a new project
  - Modeler Help
    - A place to search the help database by topic
  - Cheat sheets
    - Programmer help — Java, Eclipse
  - Software updates
    - Getting the latest product updates

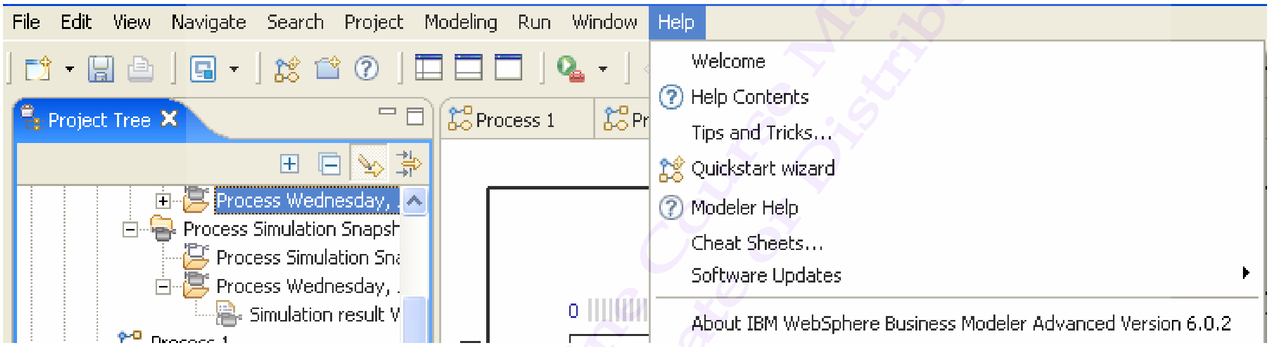

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Figure 14-22. Modeler Help VB1841.0

Notes:

Appendix A. Modeler glossary

This glossary defines the terms used in IBM WebSphere Business Modeler.

A

activities by classifier analysis	Static analysis that lists the activities in a process that are associated with each classifier value.
activities by location analysis	Static analysis that lists the allocations of locations to activities in a process.
activities by organization unit analysis	Static analysis that lists the allocations of organization units to activities in a process.
activities unable to start analysis	Static analysis that lists the activities in a process model that might not run due to empty input criteria, unavailable resources, or unavailable inputs.
activity	Work performed in a business process. Processes, tasks, services, and loops are examples of activities.
activity cost analysis	Dynamic analysis that displays the average costs incurred by all instances of each activity in a simulated process, including the average revenue, run cost, wait cost incurred while waiting for resources, allocated resource cost, total cost, and profit.
activity cost and duration analysis	Static analysis that lists the cost and minimum working duration of each action in a process based on the resource requirement for the action.
activity cost per time unit analysis	Dynamic analysis that displays the average cost per time unit for all instances of each activity in a simulated process. The costs that this analysis displays include the average processing cost, wait cost incurred while waiting for resources, and total cost.
activity duration analysis	Dynamic analysis that displays the average times for all instances of each activity in a simulated process, including the average elapsed durations, processing durations, wait time, delay time, and throughput.
activity resource allocation analysis	

Dynamic analysis that displays the resources allocated for all instances of each activity in a simulated process. This analysis lists each resource with the average allocation time, cost, and shortage.

activity resource and role leveling analysis

Static analysis that compares the number of required resources or roles to the number of available resources or roles for each activity in a process.

activity statistics analysis

Dynamic analysis that displays activity statistics for all instances of each activity in a simulated process, including the number of times each task ran successfully, and the number of times each task failed or timed out.

activity throughput analysis

Static analysis that lists the throughput (quantity of work items processed in a unit of time, such as 30 work items per hour) of each activity in a process based on its required resources, and calculates the maximum throughput that can be reached if the allocated resources are increased.

ADF

Activity Decision Flow. The format in which models are exported from WebSphere Business Integration Workbench 4.2.4. These models can be imported into WebSphere Business Modeler.

aggregate metric

A metric that is calculated by finding the average, maximum, minimum, sum, or number of occurrences of an instance metric across multiple runs of a process. Examples of aggregate metrics are an average order amount, a maximum order amount, a minimum order amount, the total order amount, or the number of occurrences of $500 for an order amount.

aggregated analysis

A category of dynamic analysis that provides summary results from a simulation run.

alert

A notification used in WebSphere Business Monitor to warn an observer of a business situation that might require action. Alerts are received and displayed in the Alerts view of WebSphere Business Monitor dashboards. Using Adaptive Action Manager, you can configure an alert to lead to an action, such as sending an e-mail.

Alerts view

A dashboard view in WebSphere Business Monitor that displays alerts to notify users of conditions that might warrant business actions.

annotation

An explanatory note or comment. Annotations can be added to a diagram or attached to elements in the diagram.

asynchronous

A way of calling an activity in which the calling process does not wait for the activity to complete.

attribute

A property, quality, or characteristic that can be associated with a business process element or program function. Examples include a cost or location attribute for a resource in a process model, or a paper-size attribute that affects how a diagram prints.

availability

The time periods during which a resource is accessible. When a resource is available, it can satisfy a resource requirement of a task. For example, a contractor might have an availability of 9 a.m. to 5 p.m. every weekday, and 9 a.m. to 3 p.m. on Saturdays.

B

basic type

A type whose values have no identity (that is, they are pure values). Basic types include Integer, Boolean, and String.

BPEL

See Business Process Execution Language.

branch

A distinct path leading to or originating from an element in a process model. Decisions and forks have one input branch and multiple output branches. Joins and merges have multiple input branches and one output branch.

breakpoint

A marker that can be applied to an activity in a simulated process. When an *activity* with a breakpoint is triggered in a simulation run, the simulation pauses until the user restarts it.

bulk resource

A collection of resources in which the individual elements are not or do not need to be uniquely identified. Bulk resources are used when a quantity of a resource is required for a task. For example, a task might require ten employees or ten liters of water. Bulk resources can be non-consumable (such as employees, vehicles, or equipment) or consumable (such as fuel or printer paper). Consumable resources are diminished or used up during the process.

bundle

A set of *tokens* that are transferred between nodes in a simulation as a complete group.

business analyst

A specialist who analyzes business needs and problems, consults with users and stakeholders to identify opportunities for improving business return through information technology, and transforms requirements into a technical form.

business group

A place to collect any elements that you would like to group together. You can create different business groups for companies, processes, parts of processes, or any other grouping that reflects the way you want to work.

business item

A business document, work product, or commodity that is either produced by a task or process (such as an invoice) or causes a process to start (such as a customer inquiry). Other examples of business items are manufacturing order, mother board, power supply, and memory chip (in a PC assembly process), itinerary and customer information record (in a trip reservation process), and passenger (in a transportation process). You can use a business item directly in a process, or you can create an instance of it.

business item instance

A particular occurrence or example of a business item. If you defined a business item called Invoice, then an example of a business item instance would be “Invoice #1473.”

business item specification query

A predefined query that shows the information in the specification for one or more selected business items.

business item template

A category used to model a group of business items that share common properties. After these properties are defined in the template, they are inherited by all business items using the template. For example, an organization might define a number of forms to be used in human resource (HR) processes, all of which have fields for date, employee number, HR form number, and HR administrator.

business measure

A measure that describes the performance management aspects of a business that are required for real-time business monitoring. Business measures include aggregate and instance metrics and KPIs.

business objective

An executive statement of direction in support of a corporate strategy. A business objective is a high-level goal that is quantifiable, measurable, and results oriented.

business operations

The ways in which an organization operates, including its processes and organizational structure. For example, an organization might have a management structure and processes defined for everything from taking vacation days to submitting travel expenses.

Business Process Execution Language

An XML-based language for the formal specification of business processes and business interaction protocols. Business Process Execution Language (BPEL) extends the Web services interaction model and enables it to support business transactions.

business service

A representation of a Web Service Definition Language file (.wsdl) imported into WebSphere Business Modeler to define existing Web services. A business service is a collection of *business service definitions* that can include *business service objects*.

business service definition

A representation of the WSDL PortTypes in a business service. A business service definition describes a specific set of *business service operations* that are used to perform related business functionality.

business service object

A representation of an XML schema file (.xsd) imported into WebSphere Business Modeler. There are inline XML schemas and schema types within WSDL files. A business service object is a collection of *business service object definitions* and *business service object templates*.

business service object definition

A representation of the WSDL ComplexType in an inline schema, or the XML schema type (SimpleType, ComplexType, Anonymous ComplexType, or Anonymous SimpleType) in an XML schema file. There are inline XML schemas and schema types within WSDL files. A business service object definition is similar to a *business item* and is used to define the business data that is required when a *business service operation* is invoked.

business service object template

A representation of an XML schema ComplexType that has the abstract attribute set to true. There are inline XML schemas and schema types within WSDL files. The business service object template is similar to a *business item template* and abstractly defines the business data that is required when a *business service operation* is invoked.

business service operation

A representation of the WSDL Operation in a business service definition. A business service operation describes a business function and includes the *business service object definitions* that are required when the operation is invoked. A business service operation also describes the *business service object definitions* that result from completing the business service operation. For example, a Product Search business service operation requires a Product name (a *business service object definition*) and returns a Product *business service object definition*. Business service operations can be added to process diagrams as non-editable services.

C

case

A specific run path in a process that contains multiple possible paths.

catalog

A container that, depending on the container type, holds processes, data, resources, organizations, or reports in the Project Tree view.

category

A container that allows you to represent qualities of elements in a *structure* diagram.

chart series

A selection of a category of data that will be represented by a chart in a report. A chart can have multiple chart series to represent multiple types of data.

classifier

A group name that can be assigned to a task or other process element to categorize the element. Predefined classifiers are provided to classify elements by quality control, value added, and workflow.

comparison analysis

A category of dynamic analysis that allows you to compare the weighted average analysis results for two simulated processes that use the same input parameters.

condition

An expression that can be evaluated to either true or false. A condition can be expressed in natural language text, mathematically formal notation, or in a machine-readable language.

connection

A link between two elements. Connections can be used to specify the chronological sequence of activities in a process.

correlation condition

A condition used to correlate input to a particular runtime instance of a task or process. For example, if there are multiple instances of a single task already running, and new input arrives that could be delivered to a running instance, then the correlation condition is used to identify the task instance that should receive the input.

critical path

The series of activities that must occur as scheduled for the completion date of a case to be met. The critical path is the path among parallel paths (in the same case) with the longest duration. Each path considered begins at a start node, or an input to the process, and ends at a stop node.

CVS

Concurrent Versions System. An open-source, network-transparent version control system.

cycle time

The time between the beginning and end of a process instance in a process simulation. Cycle time includes wait time while an activity in the process waits for a resource to become available.

D

dashboard

A container (portal page) that can contain one or more views (portlets). In WebSphere Business Monitor, a dashboard enables users to monitor business performance through a set of views.

data catalog

A collection of models representing objects, such as business items and notifications, to be used as inputs and outputs in process modeling.

data model

A model defining the structure of business artifacts that business operations operate on.

database schema

A collection of database objects, such as tables, views, indexes, or triggers, that define a database. A database schema provides a logical classification of database objects.

decision

A process element that routes an input to one of several alternative outgoing paths, depending on its condition. A decision is like a question that determines the exact set of activities to perform during a process run. Questions might include "What type of order?" and "How will the order be shipped?"

delimited text

A file format that consists of text separated into meaningful chunks by specific characters. The chunks of text are typically individual fields. The specific character is called a delimiter, and can be any character that is not found in the text. The comma and tab are common delimiters. If the delimiter is used as a character in the text, it must be enclosed in a pair of text qualifiers, typically double quotation marks.

dimension

A data category that is used to organize and select instances for reporting and analysis. Some examples of dimensions are time, accounts, products, and markets.

Dimensional view

A dashboard view in WebSphere Business Monitor that generates multidimensional reports that analyze different business aspects of data.

distribution

The relative number of times each possible outcome will occur in a number of trials.

do-while loop

A loop that repeats the same sequence of activities as long as a condition is true. Unlike a while loop, a do-while loop tests its condition at the end of the loop. This means that its sequence of activities always runs at least once.

downstream

Indicates the position of a subsequent element or activity in the process flow relative to a particular point. An activity in a process receives inputs from upstream nodes, and sends outputs to other downstream nodes.

dynamic analysis

The process of extracting targeted types of information based on the results of process simulations. Dynamic analysis can be run only if simulation results are available.

E

elapsed duration

The difference between the start time and the end time of a task or a process, which might include wait time as well as processing time. If a task instance is created, but one or more required resources are unavailable, the elapsed duration will be longer than the working duration.

element

A distinct, self-contained unit of a business process model. Examples of elements are tasks, projects, snapshots, resources, and connections.

end node

A visual marker in a process that identifies where a particular flow in that process ends. Other concurrent flows in the same process will continue running.

entity

An element in a *structure* diagram, such as a business item instance, an organization unit, or a resource.

entity structure analysis

Static analysis that displays the occurrences of a selected instance (such as a business item instance, an organization unit, or a resource) within a selected set of *structures*.

F

FDL

FlowMark Definition Language. An external format for defining programs, data structures, and workflow models in a flat text file. Models exported from WebSphere Business Modeler in FDL format can be imported into IBM WebSphere MQ Workflow.

filter expression

An optional expression that a notification receiver uses to filter the notification instances that it will accept. The notification receiver listens for a particular type of notification, and it will only accept notification instances that meet the criteria specified by the filter expression.

flow

The representation of interdependencies between activities in a structured format. In WebSphere Business Modeler, the flow always moves forward in time.

for loop

A loop that repeats the same sequence of activities a specified number of times.

fork

A process element that splits the process flow into two or more concurrent paths, enabling two or more tasks to be performed in parallel. A fork makes copies of its inputs and forwards them along each of the paths. Forks typically precede joins.

free float

A period of time in a process flow after a task runs and before the subsequent task can begin to run. Free floats might result from parallel paths in a process that take varying lengths of time to complete.

G

Gauge view

A dashboard view in WebSphere Business Monitor that helps you visualize information by representing a KPI value on a gauge, like a speedometer.

global element

Available to any process within its own project. A global element is displayed in the Project Tree view and can be used in multiple processes. Tasks, processes, and repositories can be either global (referenced by any process in the project) or local (specific to a single process).

I

individual resource

A single resource that can be uniquely identified, such as a person or computer. Individual resources are used when a specific resource must be allocated to a task. For example, the Mary Smith resource must perform the Approve Payment task.

information repository

See repository.

inline schema

An XML schema in a Web Service Definition Language file (.wsdl).

input

An entry point through which an element is notified that it can start, typically because an upstream element on which it depends has finished running. If the element has all of its required inputs, then it will start.

input branch

The branch of a decision, fork, join, or merge that contains the inputs.

input criteria

Number and types of inputs required to start a task or process. The singular form is *input criterion*.

input and output paths analysis

Static analysis that displays the paths that lead to and from a specified point in a process.

instance

A particular occurrence or example of something.

instance metric

A metric that returns the result, such as the amount of an order, from one run of the process.

Instances view

A dashboard view in WebSphere Business Monitor that displays instance metrics.

internal rate of return

The interest rate received for an investment based on anticipated expenses and income that will occur at regular periods.

interrupt

A condition that applies to a simulation that causes the simulation run to stop if the condition is met.

J

join

A process element that recombines two or more parallel control flow paths that all must complete before a single control flow continues along a single path to a common process element. A join also synchronizes data flow, waiting for input to arrive at each of its incoming branches. The join does not recombine business items, so each business item from the join is permitted to continue. Joins typically follow forks.

K

key

A character or set of characters used to identify an item or group of items. For example, the user ID is the key to identify a user file record.

key performance indicator

A significant measurement used to track performance against a business objective. A key performance indicator (KPI) has a target or ranges, or both, to measure the improvement or deterioration in the performance of an activity that is critical to the business.

KPI

See key performance indicator.

KPI view

A dashboard view in WebSphere Business Monitor that shows the details of the modeled KPIs, such as the KPI value relative to the defined ranges and the target, if applicable, and the status of the KPI.

L

library

A container for the model elements, including business items, processes, tasks, resources, and organizations. The library node is visible only in the Project Tree view if all filters are turned off. It is used to differentiate the business groups from the complete set of available elements in a project.

local

Available only within its own process. A local element exists only as long as the process does. Tasks, processes, and repositories can be either global (referred to by any process in the project) or local (specific to a single process).

location

A particular occurrence or example of a location definition. If you have a location definition called USA Call Center, an example of a location would be Toledo Call Center.

location definition

A destination that is relevant to the model. Location definitions can be street addresses, cities, areas, or countries. For example, a model could show various branch offices or customer locations. You can use location definitions directly in a process, or you can create a location (an instance) based on the location definition.

location definition template

A category used to model a group of locations that share common properties. After these properties are defined in the template, they are inherited by all locations using the template. For example, an organization might define a number of sales office locations, all of which share properties (such as monthly rent and square footage) that are defined in a sales office location definition template.

location specification query

A predefined query that shows the information in the specification for one or more selected locations.

loop

A repeating sequence of activities in a process.

M

map

A map is a specialized task that transforms data from one structure to another. A map is provided for diagram purposes only.

matrix analysis

Static analysis that displays associations between all examples of two different types of model elements that you specify (such as resources and roles).

measure

The dimensions, capacity, or amount of something ascertained by measuring. See also business measure.

merge

A process element that recombines multiple processing paths, typically after a decision. A merge brings several alternative paths together.

metric

A container for information, usually a business performance measurement.

model

A representation of a process, system, or subject area, usually developed for understanding, analyzing, improving, and replacing the item being represented. A model can include a representation of information, activities, relationships, and constraints.

monitored values

The values that you want WebSphere Business Monitor to return after the process has been monitored.

N

net present value

The estimated monetary value of an investment based on expected returns and expected costs, where these expected returns and expenses are discounted by a rate that reflects inflation and opportunity costs.

node

A shape in a diagram. Nodes are the fundamental shapes that make up a diagram, and connections are created among them.

notification

An occurrence in a process that can trigger an action. A notification can be used to model conditions of interest that are to be transmitted from a sender to a (typically unknown) set of interested parties (the receivers).

notification broadcaster

A specialized task that publishes *notifications*. A notification broadcaster acts as a publisher. When a notification is broadcast, any *notification receiver* within its scope that is listening for (subscribing to) that notification receives it.

notification receiver

A specialized task that listens for *notifications*. A notification receiver acts as a subscriber. When it receives a notification, it produces the output that has been modeled, and then terminates.

notification specification query

A predefined query that shows the information in the specification for one or more selected notifications.

notification template

A category used to model groups of *notifications* that share common properties. After these properties are defined in the template, they are inherited by all notifications using the template. For example, the notifications signaling "fire alarm," "burglar alarm," and "power outage, might share a template called "alarm notification" that defines common properties for these notification types, such as date, time, and detecting sensor location.

O

observer

A task that watches a process and its associated repositories, and produces output when a certain condition becomes true (for example, a threshold value has been reached).

organization

An entity where people cooperate to accomplish specified objectives. For example, an organization can be an enterprise, a company, or a factory.

organization catalog

A collection of models representing organizations, to be used in process modeling.

organization definition

An organization that is relevant to the model. Organization definitions can be companies, departments, or workgroups. You can use organization definitions directly in a process, or you can create an organization unit (an instance) based on the organization definition.

organization definition template

A category used to model a group of organizations that share common properties. After these properties are defined in the template, they are inherited by all organizations using the template. For example, a company might define a number of sales organizations, all of which share properties (such as area covered and number of employees) that are defined in a sales office organization template.

organization unit

A particular occurrence or example of an organization definition. If you have an organization definition called Department, an example of an organization unit would be Sales and Marketing.

organization unit specification query

A predefined query that shows the information in the specification for one or more selected organization units.

output

An exit point through which an element can inform downstream elements that they can now start.

output branch

The branch of a decision, fork, join, or merge that contains the outputs.

output criteria

Number and types of outputs required for a task or process to complete. The singular form is *output criterion*.

P

path

A route that the flow might take through the activities in a process. There might be several alternative paths.

path cycles analysis

Static analysis that displays a list of the paths in a process that have a closed loop of connectors and activities.

paths unable to be followed analysis

Static analysis that displays the paths in a process model that might not run due to empty input criteria, unavailable resources, or unavailable inputs.

postcondition

A definition of what must be true when a task or process ends.

precondition

A definition of what must be true when a task or process starts.

preference

A setting for a condition or behavior associated with an aspect of product configuration or function. For example, preferences might store network settings for a team development environment, or contain default settings for new elements.

process

Any activity performed within a company or organization. In the context of WebSphere Business Modeler, a process is a progressively continuing procedure consisting of a series of controlled activities that are systematically directed toward a particular result or end.

process activities total time analysis

Weighted average case analysis that displays the average total elapsed duration of task instances that are involved in the process instances corresponding to each case. This analysis also displays the weighted average elapsed duration across all cases.

process break even analysis

Weighted average case analysis that calculates the number of times a process must run to generate a profit that recovers a specified fixed cost.

process case

A specific path in a business process, based on outcomes of decisions.

process cases analysis

A category of dynamic analysis that displays details of all generated process instances and weighted average values across all cases calculated according to the distribution of process instances to each case.

process cases summary analysis

Weighted average case analysis that displays summary details for all the process cases that are produced during the simulation of a process.

process catalog

A collection of models representing processes, tasks, and repositories.

process cost analysis

Weighted average case analysis that displays a list of process cases and the average revenue, average run cost, average wait cost incurred while waiting for resources, average allocated resources cost, and average profit for the process instances running through each possible path (case). This analysis also displays an weighted average of the analyzed costs across the various process cases.

process details query

A predefined query that shows information about a process, including the catalog, resources, roles, organization units, locations, and business items that are associated with the process.

process diagram

A visual representation that illustrates the flow of work for a process. The objects in a process diagram include tasks, processes, connections, business items, resources, and decisions.

process duration analysis

Weighted average case analysis that returns a list of the process instances and shows the elapsed duration and the throughput of each process instance. The conclusion of this analysis is the weighted average value for each item.

process instance

A single initiation, run, and completion of a process in a simulated or real environment.

process instance activities free float analysis

Process instance analysis that returns a list of the task instances in a specific process instance, and quantifies the duration of the period after the task ran and before the subsequent task runs.

process instance analysis

A category of dynamic analysis that provides information based on the simulation results of an individual process instance.

process instance cost analysis

Process instance analysis that displays cost information about the task instances involved in a specific process instance, including the revenue generated from each task instance, the run cost, the wait cost incurred while waiting for resources, allocated resources costs, total cost, and profit.

process instance cost report

A report that shows the results of a process instance cost analysis.

process instance critical path analysis

Process instance analysis that displays the process elements that are included in the critical path, or processing path that takes the longest time to complete of all parallel paths in a process instance, where each path considered begins at a start node or an input to the process and ends at a stop node.

process instance resource allocation analysis

Process instance analysis that displays information about the task instances involved in a specific process instance, including the start time of the task instance, the resources allocated per task instance and quantities of allocated resources, the allocation duration, shortage, and cost.

process instance shortest path analysis

Process instance analysis that displays the process elements that are included in the shortest path, or the process instance that has the smallest number of steps.

process instance time analysis

Process instance analysis that displays time information about the task instances involved in a specific process instance, including the start and finish times of the task instance, elapsed duration, processing duration, and wait time.

process instances summary analysis

A category of process instance analysis that describes the results from process simulation at a case and instance level.

process model

A representation of the real-time business process that is composed of the individual steps or activities that make up the process, contains the conditions that dictate when they occur, and identifies the resources required for its performance or run.

process model analysis	A category of static analysis that provides information based on a process model.
process NPV/IRR analysis	Net Present Value/Internal Rate of Return analysis. Weighted average case analysis that calculates the net present value of the process after a period of time identified by a specified payback period, and considering a specified discount rate depending on the weighted average process cost and profit.
process resource allocation analysis	Weighted average case analysis that displays weighted average resource allocation information for all activities in all process instances that are generated during a simulation.
process resource analysis	Weighted average case analysis that displays a list of the resources allocated on the task instances involved in all the process instances, and shows per resource the weighted average allocation duration, shortage duration, and allocation cost.
process specification query	A predefined query that shows the information in the specification for one or more selected processes.
process statistics query	A predefined query that shows the quantities of elements associated with a process, including resources, roles, organization units, locations, and business items.
processes break even comparison analysis	Analysis that compares the results of process instance break even analyses for two different simulated processes that use the same input parameters.
processes cost comparison analysis	Analysis that compares the results of process instance cost analyses for two different simulated processes that use the same input parameters.
processes cycle times comparison analysis	Analysis that compares the results of process instance cycle times analyses for two different simulated processes that use the same input parameters.
processes duration comparison analysis	Analysis that compares the results of process instance duration analyses for two different simulated processes that use the same input parameters.
processes NPV/IRR comparison analysis	

Net Present Value/Internal Rate of Return comparison analysis. Analysis that compares the results of NPV/IRR analyses for two different simulated processes that use the same input parameters.

processes resource cost comparison analysis

Analysis that compares the cost results of process instance resource cost analyses for two different simulated processes that use the same input parameters.

processes resource times comparison analysis

Analysis that compares the time results of process instance resource time analyses for two different simulated processes that use the same input parameters.

project

A grouping of information related to a single work effort.

Project Tree view

A view that displays the complete contents of all projects. From here, select elements and edit them, or select elements for operations such as exporting.

project versioning

The component that interacts with a *CVS* or *Rational ClearCase* server to share and create version projects and project data.

publisher

The component that sends a copy of a project or some of its elements to a server running WebSphere Business Modeler Publishing Server.

Q

qualification

A definition or measurement of a specific quality required for a role. A qualification can be used to specify the characteristics of a role, whether the role is associated with a person or with another type of resource.

qualified resource availability analysis

Static analysis that displays the times when one or more resources qualified for a specified role is available, and the number of qualified resources during each of these periods.

qualified resource availability for duration analysis

Static analysis that displays the times when one or more resources qualified for a specified role is available for a specified duration.

qualified resource cost analysis

Static analysis that displays the average cost of a specified role during a specified period of time, based on the average cost during the period of all resources that are qualified to perform the role.

qualified resources costs summary analysis

Static analysis that lists all the roles defined in a project and displays the calculated average cost for each role during a specified period of time, based on the average cost during the period of all resources that are qualified to perform each role.

qualified resources for role analysis

Static analysis that displays resources that are qualified to perform one or more roles that you select for the analysis.

query

A reusable request for information about one or more model elements.

query builder

A tool for creating queries.

R

range

A set of values to measure the value of a KPI against. You specify a range by giving the lower and upper bounds for the values. These bounds can be specified either as percentages of the KPI target or as actual values.

recurring time interval

A regular period of time of significance to a process, such as 9 A.M. to 5 P.M. on weekdays.

report

A formatted presentation of information relating to a model that can be seen online or in print, or exported to various file formats.

report catalog

A collection of report templates.

report container

A group of settings that define the overall presentation of a report, including page dimensions and orientation, margin sizes, and options for displaying title, author, and summary information.

Report view

A dashboard view in WebSphere Business Monitor that displays business performance reports relative to a time axis.

repository

A storage area for data. Every repository has a name and an associated type. There are two types of information repositories: local (specific to the process) and global (usable throughout a project).

repository specification query

A predefined query that shows the information in the specification for one or more selected repositories.

resource

A person, equipment, or material used to perform a task or a project. Each resource is a particular occurrence or example of a resource definition. For example, a resource definition called Service Vehicle would yield the Service Vehicle #3 resource.

resource and role leveling analysis

Static analysis that displays the quantity of the resources and roles that each task requires, and the quantity available.

resource availability for duration analysis

Static analysis that displays the times when a specified resource is available for a specified duration.

resource availability for duration report

A report that shows the results of a resource availability for duration analysis.

resource availability analysis

Static analysis that displays the times when a specified resource is available.

resource availability report

A report that shows the results of a resource availability analysis.

resource catalog

A collection of models that represent resources, such as employees, computers, and electric power, to be used as inputs and outputs in process modeling.

resource cost analysis

Static analysis that displays the average cost of a specified resource during a specified period of time.

resource definition

A definition of a person, equipment, or material used to perform a task or a project. Use resource definitions directly in a process, or create a resource (an instance) based on the resource definition.

resource definition template

A category used to model a group of resource definitions that share common properties. After these properties are defined in the template, they are inherited by all resources using the template. For example, an organization might define a number of employees, all of which share properties (such as title, salary, and date of employment) that are defined in an employee definition template.

resource model

A model that defines the resources used in business operations, including their roles, availability, and cost characteristics.

resource roles analysis

Static analysis that displays a list of resources and shows their associated roles.

resource specification query

A predefined query that shows the information in the specification for one or more selected resources.

resource utilization analysis

Dynamic analysis that shows all the resources allocated for the task instances in a simulated process, with their average allocation costs, durations, and shortages.

resources costs summary analysis

Static analysis that displays multiple selected resources and the average cost of each during a specified period of time.

role

The actions, authorities, and qualifications assigned to or expected of a person or group. For example, an employee resource could have the role of Customer Service Representative, Supervisor, or Manager.

role qualified resource analysis

Static analysis that displays a list of roles and the resources that are qualified to perform these roles.

role specification query

A predefined query that shows the information in the specification for one or more selected roles.

roles costs summary analysis

Static analysis that displays the costs of multiple roles for all periods during which the roles are available between a specified start and end time.

rule

A condition that must be satisfied when performing a business activity.

S

schema

A collection of attributes that defines an element definition. A database schema provides a logical classification of database objects.

service

An external entity outside the organization that can be used within the processes of that organization. Examples of services are those that are provided by suppliers or service organizations such as travel agencies, collection agencies, payroll services, security companies, and transportation companies.

service details query

A predefined query that shows information about a service, including the catalog, resources, roles, organization units, locations, and business items that are associated with the service.

service specification query

A predefined query that shows the information in the specification for one or more selected services.

service statistics query

A predefined query that shows the quantities of elements associated with a service, including resources, roles, organization units, locations, and business items.

setting

An attribute and corresponding value. For example, a setting of "Cost: $9.00 USD", defines the cost attribute as having a value of $9.00 USD. A setting "Page size: A4" sets the page size attribute to a value of A4.

shortest path

The processing path that takes the shortest time to complete of all parallel paths in a process instance, where each path that is considered begins at a start node or an input to the process and ends at a stop node.

simulation

A faster-than-real-time performance of a process in a virtual environment. Simulation enables organizations to observe how a process will perform in response to variations of inputs to the process, just as in a real-life work environment. Simulation also provides the ability to vary process input volume over time by adjusting resources and current allocations. Simulation output provides detailed information regarding resource usage levels and the results of cost and cycle-time calculations.

simulation mode

The method of selecting an output path that was used when simulating a process. The term *simulation mode* is displayed in dynamic analysis reports.

simulation profile

A copy of a process that you can customize and run in the simulation view. You can create different simulation profiles within simulation snapshots.

simulation snapshot

A record of a modeling project at the moment when you simulate the process. A simulation snapshot also contains a snapshot settings folder that you can use to specify default values for the attributes of new simulation profiles that you create within the simulation snapshot.

specification

A declarative description of what something is or does.

static analysis

The process of extracting targeted types of information on the models in their static form. Static analysis can be run even if no simulation results are available.

static process cases summary analysis

Analysis that shows details of each of the possible process cases that a simulation profile can produce.

start node

A node that identifies the beginning of a process flow whenever it is not started by another process. A start node is typically used in the top-level process within the project.

stop node

A node that marks the end of a process. When a flow reaches a stop node while the process is running, the process immediately terminates, even if there are other currently running flows in the process.

structure

A series of elements that have been graded or ranked in a useful manner. A structure is a graphical representation of the relationships between different real entities in an organization.

structure definition

A graphical representation of a format that defines a structure. Create structures based on this definition.

subprocess

A process that is also a part of another process. *Subprocess* is another name for a local process.

swimlane

A visually separated row in a process flow diagram that groups all the activities in the process that are performed by a particular combination of roles, individual or bulk resource definitions, classifiers, organization units, or locations. Swimlanes (a name derived from an analogy to lanes in a swimming pool) are visible only when you select the swimlane layout in the process editor.

synchronous

A way of calling an activity in which the calling process waits for the activity to complete.

systems analyst

A specialist who is responsible for translating business requirements into system definitions and solutions.

T

target

A value that a KPI should achieve, such as "300" or "5 days."

task

The basic building blocks in the model. Each task performs a function (does something). Visually, a task represents the lowest level of work shown in the process.

task details query

A predefined query that shows information about a task, including the catalog, resources, roles, organization units, locations, and business items that are associated with the task.

task specification query

A predefined query that shows the information in the specification for one or more selected tasks.

task statistics query

A predefined query that shows the quantities of elements associated with a task, including resources, roles, organization units, locations, and business items.

team support

See project versioning.

template

A grouping of elements that share common properties. These properties may be defined only once, at the template level, and are inherited by all elements using the template. In Java terms, this is an abstract class.

threshold

A setting that applies to an interrupt in a simulation that defines when a process simulation should stop based on a condition existing for a specified proportion of occurrences of an event.

throughput

The average number of times per hour that an activity or a process can deliver output, calculated as an inverse of the average elapsed duration.

timer

A task that produces output at certain points in time.

timetable

A schedule of times. In business process modeling, timetables are typically associated with resources or costs. For resources, timetables indicate availability (such as 9 A.M. to 5 P.M.). For costs, timetables are useful if the cost varies with the time of day or time of year.

timetable specification query

A predefined query that shows the information in the specification for one or more selected timetables.

token

A unit of work that is transferred between nodes in a simulated process. A token might be accompanied by a business item or it might just represent a transfer of control between nodes.

type instance matching analysis

Static analysis that displays a list of the names and attribute values of every instance based on a selected type (such as a business item, an organization definition, or a resource definition).

type instance matching matrix analysis

Static analysis that displays a matrix of the names and attribute values of every instance based on a selected type (such as a business item, an organization definition, or a resource definition).

type structure analysis

Static analysis that displays the occurrences of a selected type (such as a business item, an organization definition, or a resource definition) within a selected set of structure definitions.

U

UML

Unified Modeling Language. A standard notation for the modeling of real-world objects as a first step in developing an object-oriented design methodology.

upstream

Indicates the position of a preceding element or activity in the process flow relative to a particular point. An activity in a process receives inputs from upstream nodes, and sends outputs to other downstream nodes.

W

wait cost

The cost incurred by an activity instance while it is not actively processing because it is waiting for a resource.

wait time

The time an activity spends waiting for resources rather than processing.

weighted average analysis

A category of dynamic analysis that provides information based on the process simulation results for all the possible process instances of a process, aggregated by their run paths (cases). In addition to the results for each case, the analysis displays weighted averages across all cases, where the results for each case are weighted according to the distribution of process instances to that case.

while loop

A loop that repeats the same sequence of activities as long as a condition is true. The while loop tests its condition at the beginning of every loop. If the condition is false from the start, the sequence of activities in the loop never runs.

working duration

The time when a task or a resource is actively working. The working duration of a task can be different from elapsed duration, which might include wait time as well as processing time.

workspace

The directory or disk that contains all project files and information, such as preferences, that might have been customized.

X

XSD

XML Schema Definition. A language for describing XML files that contain schema.

X field

The primary data field in a chart. In a line chart, the X field is typically displayed along the horizontal axis.

Y

Y field

A secondary data field in a chart. In a line chart, the Y field is typically displayed along the vertical axis.

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